

Amateur Radio



Volume 75 No 9
September 2007



The magazine for **AUSTRALIAN** radio amateurs

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WICEN *On track at Targa*

A "Noise Tracker" receiver
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Mains power supply and
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Our Cover this month

"Targa Tasmania is a tarmac car rally, with a focus on historic and classic cars, which runs over five days and covers much of Tasmania. For many years, amateurs have formed the core of the communications team..." Read the story on page 21. Inset picture courtesy of Perfect Prints

Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiments, experiences opinions and news. Manuscripts with drawings and/or photos are always welcome and will be considered for publication. Articles on disc or email are especially welcome. The WIA cannot be responsible for loss or damage to any material. A pamphlet, 'How to write for Amateur Radio' is available from the National Office on receipt of a stamped self-addressed envelope.

Back Issues

Back issues are available directly from the WIA National Office (until stocks are exhausted), at \$4.00 each

(including postage within Australia) to members.

Photostat copies

When back issues are no longer available, photocopies of articles are available to members at \$2.50 each (plus an additional \$2 for each additional issue in which the article appears).

Disclaimer

The opinions expressed in this publication do not necessarily reflect the official view of the WIA and the WIA cannot be held responsible for incorrect information published.

Amateur Radio Service

A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs; that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

Wireless Institute of Australia

The world's first and oldest National Radio Society Founded 1910

Representing
The Australian Amateur Radio Service

Member of the
International Amateur Radio Union

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WICEN

Editorial Comment

Peter Freeman VK3KAI

AR delivery

On behalf of the entire Publications Committee, I thank all who have responded to our request for information about the date of delivery of AR to members' addresses. As I prepare this Editorial, we had received replies from 163 members for the June issue, 186 for July and 102 for August, with us expecting to receive a few more for August, especially from areas a little further out from the capital cities.

Whilst we have yet to examine the data in detail, it appears that most members are receiving their copy of AR within a reasonable time from the mailing date. It appears that Australia Post does a reasonable job of attempting to meet its delivery guidelines. There are always a few exceptions, but we would need to undertake a major exercise to attempt to identify the causes of those unusually late deliveries.

Ernie Walls VK3FM reports that many respondents have included some nice comments on the magazine – we all thank you for the compliments.

You might ask "What prompted this short survey?" We have received a small number of comments regularly from members about the delivery date of AR to members' homes. A little deeper investigation usually reveals that the major issue is not so much the actual date of delivery, but that some are annoyed that they see the magazine on their local news agency stands a day or more before it appears in the mailbox. I appreciate that this might be a little frustrating for those so affected. The problem comes about because of the delivery mechanisms.

All member copies are posted through the Australia Post distribution network. The expected delivery times can be established by looking through the appropriate documents on the Australia Post web site. For most areas of Australia, delivery should take a maximum of seven (7) days, unless you are at the further reaches of this large continent. Our data shows that for each of the three months for which we have data, these deadlines have been met except for a very small number of later deliveries.

Copies of AR going to the news stands

are delivered in bulk to one of the major magazine distribution companies. As the distribution of magazines to the retail outlets is the speciality of this type of company, they have developed extremely efficient distribution systems. Part of the efficiency, compared to Australia Post, is that deliveries are only made to a relatively small number of outlets in each town. On the other hand, magazines delivered via Australia Post make up a small proportion of an overall huge quantity of mail items delivered to essentially every household across the nation.

Together with our publication house, Newsletters Unlimited, we are exploring ways that may allow for the earlier delivery of AR each month. There are many factors involved and it may take some months before we reach our goals. However, even if we do our best, some members might still see the magazine in the shops before it is in the mailbox. We therefore ask members to be patient – all involved are working as best we can with the systems available to us.

August – contest month?

In VK, it seems that August was contest month. I trust that all enjoyed their participation in the three major weekends of activity: the RD Contest, the ILLW and the ALARA Contest. Having participated, you should make the extra effort for the two contests and submit your logs. It really does not matter if you will not win – by submitting your log you show that you have supported the goals of the Contest. I know that each extra log means additional work for the Contest Manager, but I am sure that it is work that they really appreciate. It is the lack of logs that the managers usually find frustrating – why go to all the effort of refining the rules, distributing them to multiple outlets, and sending out news items to magazines, clubs and the broadcast team, only to see a small number of logs entered. More logs show that the news has been heard, and indirectly the efforts appreciated. Check the Rules – make sure the log is in by the deadline!

Cheers,
Peter VK3KAI

ar

TAC to FTAC to NTAC

One of the most respected groups that provide a service for the WIA is the TAC – the Technical Advisory Committee, or rather what used to be called FTAC, the Federal Technical Advisory Committee, which is, of course, what we now call NTAC, the National Technical Advisory Committee.

We do make life hard for ourselves, don't we, playing with names and titles?

But it is the fact that the National Technical Advisory Committee is an example of gradual change to preserve what is good, to adjust to the new structure of the WIA and to try to make what is good even better.

One of my more vivid memories of days gone by in the WIA was a series of meetings attempting to develop a logical and national set of 2 metre FM frequencies, the then new mode using second hand commercial equipment, rather than the rather random frequencies that had developed. Slide rules to calculate crystal frequencies produced some pretty strange results.

Then, during the 1970s the Federal Council of the WIA established a VHF-UHF Advisory Committee, with the main function of developing national VHF-UHF band plans.

Around this time the Federal Repeater Secretariat (later Federal Repeater Committee) also came into existence to provide national co-ordination of repeater development. Several years later these committees were merged into the Federal Technical Advisory Committee, which was also given responsibility in other areas of technical co-ordination and planning.

By this time some Divisions were also creating their own Technical Advisory Committees. In 1990 the structure of FTAC was reorganised to include representatives of each state TAC as well as the original technical advisory panel.

Then came the national WIA.

Fairly soon after that came ACMA, instead of the ACA, and the centralisation of licensing to Canberra.

One of the roles of the Technical

Advisory Committees had been to endorse repeater and beacon licences, and with the centralisation of the ACMA licensing function the WIA, in July 2005, created the position of National Repeater and Beacon Coordinator to liaise with the ACMA and the appropriate members of the NTAC.

That role was important. It ensured that repeater and beacon frequencies conformed to the band plans, provided pre-vetting to ensure that the applications were complete, provided an informed point of contact, and enabled ACMA to do the minimum site compatibility checks.

It is also a lot cheaper than having to provide certification from an Accredited Person appointed by ACMA in accordance with Part 5.4 of the Radiocommunications Act.

Peter Mill VK3ZPP was already deeply involved in the WIA endorsement of repeater applications, and the Board was pleased when he accepted the national position.

But apart from beacons and repeaters and band plans, what did they do?

I knew who to contact when I needed technical advice for VHF or UHF submissions to the ACA (as it then was!) and that was John Martin VK3KWA, chairman of FTAC/NTAC.

The Board then reviewed the whole structure and procedure of the committee, and among other things, defined its role as follows:

- (a) To provide technical information, advice and recommendations to the WIA Board.
- (b) To draft, revise, circulate and contribute to policy studies, documents or submissions as required by the WIA Board.
- (c) To co-ordinate with and cooperate in technical activities carried out by other WIA Committees and appointed officers.
- (d) To provide liaison with similar bodies established by national societies in other countries.
- (e) To develop, review and publicise the national band plans.

(f) To develop recommended technical standards for specialized amateur stations such as beacons, repeaters links and ATV stations.

(g) To co-ordinate frequency assignments for beacons, repeaters and links.

(h) To ensure that licence applications for beacons, repeaters and links are processed in compliance with the national band plan, other relevant WIA policies and government requirements.

(i) To maintain, and provide for publication, a database of Australian beacons, repeaters and links

(j) To maintain and publish a database of Australian VHF/UHF/SHF distance records, and to process claims for new records.

(k) To carry out other duties as assigned to the NTAC by the WIA Board.

The Board appoints people of particular skills to take responsibility for particular areas, and also appoints Regional Advisors for each call area.

Now, a further step has been taken.

As announced by a recent release, and with the detailed procedure on the WIA website, the Board in consultation with the NTAC has announced a clear procedure for obtaining the WIA's endorsement for a new or changed repeater or beacon licence.

What is different?

Really, very little, except for the handling of the process through the WIA office. The procedure is set out in NTAC documentation on the WIA website, and the applications and documents should be lodged with the WIA national office. The office will log the matter, copy the appropriate members of the Committee including the Regional Advisor and generally be responsible for tracking the progress of the matter.

Why do that? In the end, all of the people who undertake these tasks are volunteers. Sometimes volunteers get sick. Sometimes they take holidays. Sometimes other aspects of their lives

WIA News

WIA announces changes to WIA Awards Program

The WIA Board, in consultation with the WIA Awards Manager, Malcolm Johnson VK6LC, and taking the advice of Treasurer Jim Baxter, has announced some important changes to the WIA Awards rules.

Full details may be found on the WIA website under "Awards".

As from 1 September 2007, a new fee scale will be introduced, and following the lead of many overseas societies, including the ARRL, from 1 December 2007, within Australia, WIA Awards will be available only to persons who are members of the WIA.

WIA membership will not be required for applicants for WIA Awards resident outside Australia.

WIA Members will be entitled to one certificate and two Award up-dates per membership year at no charge. The fee for each further General Award certificate in a year will be A\$20, with the DXCC multi band certificate fee being \$25. Other fees can be found on the website.

The fee for foreign applicants will be A\$25 or US\$25 for each General Award Certificate and A\$30 or US\$30 for each multi band DXCC award, and A\$15 or US\$15 for each award up date. Again full details can be found on the WIA website.

The fee for WIA non-members resident in Australia until 1 December 2007 will be A\$30 for each certificate, A\$15 for each award up-date and A\$35 for each replacement certificate.

After 1 December 2007 membership of the WIA will be required for Australian residents to apply for WIA awards.

There are also some changes to the verification rules, which are hopefully a bit clearer than they were.

However, Electronic QSL methods such as eQSL, LoTW, Fax and email continue at present not to be acceptable as confirmation of QSO's for WIA awards. The rules now make it clear that applications for a WIA Award that do not substantially comply with the rules may be rejected and shall be returned to the applicant with an invitation to resubmit the application once the defects have been corrected.

WIA Board announces new Advisory Committees

The WIA Constitution that was adopted when the WIA moved from a federal structure to a single national body provided for Advisory Committees from each of the areas previously covered by the Divisions, and whose task was to advise the WIA Board in respect of more local matters.

The first members of each Advisory Committee were the members of the relevant Divisional Council who wished to be members. The Constitution provides that after three years new Advisory Committees were to be formed, with many of the details to be determined by the WIA Board.

The process to create new Advisory Committees has now finished. The Constitution provides that each Advisory Committee will have one member nominated by the WIA Board (the WIA Nominated Member) and the regulations adopted by the Board provide that three further members are to be elected.

If there are just enough nominations to fill the vacancies, then those nominating are elected, and if there was a shortfall, then the Board makes appointments to fill the vacancies.

The Board also has power to define the areas of each Advisory Committee, and has created the Northern Territory as a new and separate area for an Advisory Committee, and (after consulting with the Canberra Region Amateur Radio Club, previously the ACT Division) included the ACT as part of the New South Wales area, with a special provision to allow (but not compel) one member of the New South Wales ACT Advisory Committee to come from the ACT.

The Board has appointed its WIA Nominated Members to each Advisory Committee, nominations for election have been called by notice published in Amateur Radio, in two states the number of nominations matched the vacancies, the Board has appointed two people whose nominations were rejected on technical grounds, then where there were still vacancies, consulted with those already appointed and took their advice, and finally have made the last appointments to fill each Advisory Committee.

Accordingly, the new Advisory Committees are:

New South Wales/ACT Advisory Committee

Owen Holmwood VK2AEJ *
Dominic Dahl VK2YDD
Col Christiansen VK2BCC
Alan Hawes VK1WX

Victorian Advisory Committee

Bryan Pliatsios VK3HXR *
Lee Moyle VK3GK
Noel Ferguson VK3FGN
Mark Stephenson VK3PI

Queensland Advisory Committee

Don Wilschefschi VK4BY *
Kevin Johnson VK4UH
JR (Ross) Anderson VK4AQ
Harvey Wickes VK4AHW

South Australian Advisory Committee

David Box VK5OV *
Peter Reichelt VK5APR
Paul Hoffman VK5PH
WRG Holman VK5GSH

Western Australian Advisory Committee

Neil Husk VK6BDO *
John Howlett VK6ZN
Keith Bainbridge VK6XH
Robert Bristow VK6POP

Tasmanian Advisory Committee

David Potter VK7YUM *
Clayton Reading VK7ZCR
Jason Reilly VKZJA
Peter Rumble VK2IY/VK4KX

Northern Territory Advisory Committee

Garry Woods VK8GW *
Alan Baker VK8ZAB
Trevor Wardrope VK8TJW
Wayne Cockburn VK8ZAA

The WIA Nominated Members are shown with * after their call sign.

The new Advisory Committees do not actually take their position until 1 October, but in the mean time each Advisory Committee has been asked to identify their chairperson, work out how they are going to function and to work out the contact addresses and numbers for their committee.

In some areas a transition has already started from the old committee to the new, for example in Queensland where meetings are planned in October and so

both the old and the new are involved.

In announcing these appointments WIA President Michael Owen VK3KI said, *How the new Advisory Committees function will very much depend on the members of the Committee. The Board sees the Advisory Committees as a local representation of the WIA, there not only to advise the Board but also to actively promote and advance the WIA.*

I thank each and every one of you who have either agreed to participate or who have volunteered to participate in working for the WIA in this important way.

WIA announces changes to WIA QSL Service

A QSL Service at no cost is one of the services offered by the WIA to its members.

The WIA Board, in consultation with the National QSL Bureau Coordinator, Neil Penfold VK6NE, and through him the various QSL Managers, and taking into account WIA President Michael Owen's report of his discussions with the Westlakes Amateur Radio Club (who provide the Outwards QSL service for the WIA), has made a number of important changes to the WIA QSL Service.

The changes will take effect from 1 December 2007. Full details may be found under QSL on the WIA website.

The Board had decided that as both Inward and Outward services are provided by the Managers on behalf of the WIA, Managers should not accept money from either members or non-members as the cost of keeping and auditing adequate accounting records outweighs any benefit.

If a WIA member makes an arrangement with the local QSL Manager for their cards to be sent annually, then WIA will meet the cost of forwarding any cards received for that WIA member at their address on the membership list once a year.

WIA members who are members of an affiliated club may instead through their club request that their cards be sent to them at their club. Inward QSL Managers shall send WIA members' cards to their clubs at such times as are economic having regard to the number of cards involved, but at least once a year.

The WIA will meet the cost of sending the cards to the clubs.

So far as non-members are concerned, the Inward QSL Managers will retain non-members cards for at least one year before disposing of them, and will make available cards for collection by or on behalf of non-members in a manner convenient to the Manager.

So far as the Outward Service is concerned, WIA Members should send their cards sorted in DXCC country order direct to the WIA Outwards QSL Bureau addressed as follows:

WIA Outwards QSL Bureau
P.O. Box 3073
Teralba
NSW 2284

Affiliated clubs may collect cards on behalf of their WIA members and forward them in reasonable sized batches to the WIA Outwards QSL Bureau at the above address. The Outwards Bureau will confirm the WIA membership of the club members.

Non-members' cards will not be handled.

New NTAC repeater and beacon procedures

The National Technical Advisory committee, NTAC, is responsible for advising the WIA Board on technical matters, developing and revising national band plans, coordinating frequency assignments for repeaters, links and beacons and other tasks, and the National Repeater and Beacon Coordinator, a member of NTAC, provides "Letters of Coordination" as required by ACMA before licensing repeaters and beacons.

Following extensive consultations with the National Technical Advisory Committee Chairman John Martin VK3KWA and National Repeater and Beacon Coordinator Peter Mill VK3ZPP, the WIA Board has announced changes to the procedure for obtaining the WIA's "Letter of Coordination".

Inquiries and applications should in the first instance be sent to the WIA national office, either by mail or email addressed to nationaloffice@wia.org.au

The WIA office is responsible for routing the application to the appropriate Regional Advisor and tracking the application through the process, and

will acknowledge to the applicants that material has been received. It will also advise the applicant when the "Letter of Coordination" has been sent to ACMA.

In addition, the issue of repeater and beacon licences and changes to the licences, including terminating a licence, should also be advised to the WIA national office.

This way, the WIA can ensure that the appropriate people are kept informed, and that if particular NTAC experts are away for any reason, applications are not unreasonably delayed.

Further details can be found on the WIA website, and shortly suggestions for processing applications and templates will also be placed on the website.

Members apply for qualification as Learning Facilitators

In late April the WIA announced that WIA Learning Facilitators will replace the Invigilators and WIA Learning Organisers (who will need to be either WIA Assessors or WIA Learning Facilitator) will replace Group Leaders.

1 December 2007 was the date proposed for the change.

Full details can be found in the booklet "WIA Learning Facilitator Instructions" on the WIA website.

The application for training and registration may be made using the form on the WIA website, which may be used as an application for either Assessor Training or Learning Facilitator training and registration. There may be questions that appear unnecessary to answer. If so, don't answer them and if more information is required, the WIA office will contact you.

Already 24 members have applied for qualification (which may be done on-line) and registration as a Learning Facilitators, and more are expected soon. In addition, a number of new applications have been received for qualification as WIA Assessors.

Clubs and individuals are asked to ensure that all applications for qualification as a WIA Learning Facilitator are lodged at the WIA office as soon as possible.

Mains power supply and circuit protection

(Fuses and circuit breakers)

Lyle Whyatt VK5ZNB

This article relates to domestic type installations, as industrial installations will have other criteria. The fuses and circuit breakers (CBs) under discussion are the circuit fuses at the switchboard, not the fuses which may be installed in any apparatus.

Operation of fuses and circuit breakers

Wire fuses

Wire fuses are heat/temperature sensing devices. In normal operation, at loads up to its rated capacity, the fuse will heat up as a resistor in the circuit (which it is). Under overload conditions the temperature rises to the melting (fusing) point of the wire element, and the fuse opens the circuit. Under typical conditions, with tinned copper wire, the actual fusing current will correspond to about twice the rated current. Figure 1 shows a common porcelain fuse-holder and also a modern CB which can replace its re-wireable wedge.

If the fuse is subject to a short circuit, the temperature rise will be almost instantaneous and the wire will vaporize, causing an arc within its holder, and leave only coppery black flash residue. Some re-wireable fuse wedges have a tortuous wire path to help extinguish the arc. As the size of street supply mains and consumer circuit wiring is increased, there is a possibility that the

lower impedance of the mains will allow sufficient current to flow to maintain the arc, which continues until some other protection feature operates. In extreme cases, a fire may ensue, especially in multi-phase installations.

HRC Fuses

High Rupturing Capacity (HRC) fuse elements are typically silver wire or foil and are contained in a ceramic tubular container with metal end caps. The space within the tube is filled with a sand-like substance. These fuses act in the same way as wire fuses with respect to overload conditions, and typically will not operate until about three times the rated current is exceeded for some time. Under short circuit conditions, the vaporization of the element and any arcing is contained within the ceramic tube and is not likely to cause a fire. Figure 2 shows a typical HRC fuse cartridge with both base and top of its fuse-holder.

Fuse and CB ratings

The rating of fuses and CBs includes three parameters:

- Voltage of circuit
- Current rating. Normal/continuous operation.
- Rupture capacity. The effective capacity to interrupt an instantaneous fault current up to thousands of amps without mechanical failure (blowing up or destroying itself)

Wire fuses have a very low rupture capacity under fault current. Typical HRC fuses have a rupture capacity of 80 to 100 kA and offer the highest protection, but with the added expense, if you have to replace them. Wire fuses should *never* be used to replace HRC fuses. Replacement fuses should always match the existing fuse rating but could have a higher rupture capacity.

Circuit breakers

Circuit breakers (CBs) are essentially a spring-loaded switch with the contact release mechanism being both temperature (normal load current) and magnetically (fault current) controlled. The separating contact system will be located within an arc-chute to stretch

Glossary of terms

Fuse: A device placed in the active line of a circuit, which provides protection through the fusing of a wire or similar element. This device requires replacement of the fusible element before the circuit is restored.

Circuit breaker: A device, which through heating and/or magnetic effect causes a spring loaded contact to be opened. This device can be simply re-set to restore supply after the fault/overload is removed.

Overload fault: A circuit which is electrically overloaded beyond the designed limit, although the excess current is not caused by any faulty appliance, e.g. a stalled motor.

Short circuit fault (temporary): A live circuit where the active and neutral are brought together in an intermittent contact.

Short circuit fault (bolted): A circuit, initially dead (switched off), which has the active and neutral effectively bolted together through

some fault, and then the switch is closed. This fault always results in very high current flow.

Mains supply fuse: The fuse (or circuit breaker) installed by the power authority, normally at the service point for the consumer.

Fault current level: The instantaneous fault current which is caused in the power mains at the service point and switchboard location. Its magnitude depends on the distance from the power station, on the voltages used, and on the differing conductor sizes in the street supply circuits. Values of 6 kA to 50 kA are typical.

Mains supply alternatives: There are many different forms of mains supply and those may require different fusing criteria when considering fault current. Typical forms are:

- Bare mains mounted on poles/cross-arms, with insulated separate service wires to

the house and then (service) fused at the eaves or in the meter box.

- Bare mains mounted on poles/cross-arms, with insulated neutral screened cable (concentric stranded neutral around the central active core(s)) and then (service) fused in the meter box.
- Bare or insulated mains mounted on poles/cross-arms, with a service fuse box mounted on the pole, supplying the consumer via an underground connection.
- Underground mains with service fuse pits/pillars at the boundary of the property. This is further divided between houses on the mains side of the road (with maximum fault current) and those fed across the road with the longer, smaller sized service cable.

and extinguish the arc around the moving contact within the body of the CB. Figure 1 shows a typical domestic CB which may replace the old porcelain re-wired wedge.

As a fully engineered device, a CB will be able to control over-current heating (time curves are published) and instantaneous faults according to the details of the design. Typical modern rail-type switchboard CBs may have a fault rating of 4.5 kA to 8 kA. If you are installing or replacing CBs use the 6 kA or 8 kA types when your fault current is high (How far away is your supply transformer?).

Plug-in CBs

Many older switchboards used wire fuses with porcelain bodies. There are plug-in CBs available which plug into the fuse base in place of the wire fuse holder. Typically these have a 5 to 20 amp rating to match the old fuses. These CBs provide much better fault protection than wire fuses and do not need to be replaced after an operation. After checking and clearing the fault, just switch 'off' to reload the spring contact assembly and then switch 'on'. They normally have a 1.5 kA to 3 kA fault rating which is better than a wire fuse, but not necessarily good enough for your fault current condition. Always look for the 3 kA variety. Do not replace a HRC fuse with an old-design porcelain type fuse base just so that you can use one of these CB's. Your HRC fuse was put there to provide high fault current protection.

Power supply system

In older areas with bare overhead copper mains, the conductors may be small (up to just adequate!) in size and these mains will provide a comparatively high impedance to fault current. This, combined with the service run from pole to house, will limit the available fault current at the switchboard such that 1.5 to 3 kA CBs should be able to handle it OK. However if you are connected to the mains at the actual transformer pole, or only one span away, your fault current could be significant, and higher rating CBs should be used.

In newer areas with larger bare/insulated overhead aluminium mains, the impedance will be less and significant fault current may be possible. The service wiring could be 10 mm² copper

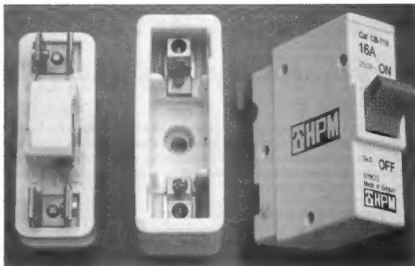


Figure 1: Porcelain wire fuse and CB replacement

and this is able to carry significant fault current to the switchboard. In these conditions wire fuses should not be used and only HRC fuses or 4.5 kA CBs, minimum, should be considered.

In modern areas, the underground street mains cables will be large, typically 150 mm² aluminium, and the smaller tee-off service cables to the other side of the road will be 35 mm² aluminium. These cables can carry substantial fault current and only HRC fuses or 6 kA CBs are recommended. In no circumstances should wire fuses be used.

A call to your power supplier should

be able to establish the fault current at your location, or at least at your supply transformer.

All modern supply service fuses will be HRC type, whether located in a pole service box, in a service pillar/pit or on the switchboard. In areas remote from the city, the service fuse may be replaced with a high rupture CB with an external operating lever. This enables a consumer to reset the CB after an incident without the necessity to call out a power company technician who has to travel many kilometres just to restore supply.



Figure 2: HRC fuse cartridge and holder

Building a variable inductance oscillator

Leon Williams VK2DOB

About twelve months ago I designed and built a QRP SSB rig for the 40 m band. I have been using it with great success and am continually amazed at where five watts can take you. I have worked most of VK, ZL and even a contact into JA without really trying, when propagation was favourable. Reports have been very pleasing, with most stations amazed that I was only running five watts after giving me a 5 and 9 report.

While homebrewing a new rig is very rewarding, one of the frustrating aspects is deciding what to use as the tuning control and frequency readout. Not that long ago this would have been a nice air spaced tuning gang and a smooth vernier reduction drive. However these items are now almost impossible to buy, at least at affordable prices, and unless you have a well stocked junk box, that new rig is bound never to see the light of day. I contemplated a modern digital approach, with maybe a PLL or a DDS, but both were complicated, expensive, used SMD components and really was not in keeping with the 'more with less'

philosophy that us QRP homebrewers espouse.

I had often wondered about using the approach that older car radios used, that is, tune with a variable inductor instead of a variable capacitor. This appealed to my inventive side, because I considered that making a variable inductor would be much easier than a variable capacitor. I then set myself the task of designing a usable system. I'm happy to say that the results have been very pleasing, with the oscillator proving to be extremely stable, and the tuning easy and smooth to operate. An unusual thing about using the oscillator is that the tuning knob

moves in and out as you tune across the band, but you quickly get used to that behaviour.

Tuning mechanism

The tuning mechanism is shown in Figure 2, and is simply a long brass screw that is screwed in and out of an air cored coil. The coil forms part of a tuned circuit in a free running oscillator, and in my case was required to tune from 3.8 to 4.0 MHz. This was easily achieved with about 10 mm travel of the screw within the coil, which equates to about 11 revolutions of the knob. An interesting thing to note is that when the brass screw

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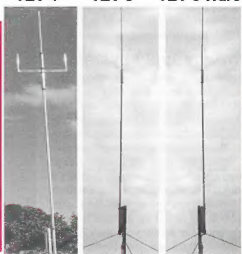
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Max. RADIAL LENGTH	18.7 metres	5 metres	7.5 metres
SWR	1.5 or less	1.5 or less	1.5 or less
POWER RATING	1 kW	1 kW	1 kW

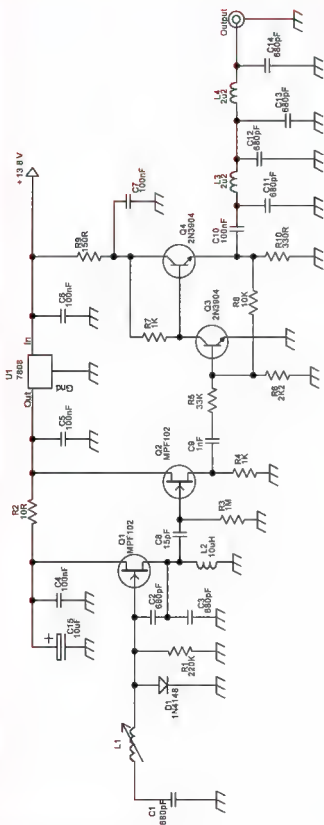


Figure 1: Mechanical assembly of the variable inductance oscillator.

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is inserted into the coil the inductance decreases. This is opposite to what one expects with a ferrite core.

The unique aspect of this design is the mechanical tuning components which consist of two nuts mounted on flexible arms, a tension spring, and a brass screw. The rotating screw provides a simple but elegant reduction drive, but it is the spring that has the most critical role. Firstly, it binds the screw between the threads of the nuts, centering the screw in the coil former and minimizing free movement. Secondly, the differential tension between the nuts acting on the screw introduces friction to the rotation, resulting in a pleasant tuning action with little backlash.

The circuit

The circuit for the oscillator is shown in Figure 1. As can be seen it is a fairly standard circuit and no claims are made for originality. Q1, an MPF102 FET, forms a Colpitts oscillator with L1 being the tuning coil described above.

C1 essentially sets the centre frequency and the value will need changing to move the oscillator onto a different frequency. The output of the oscillator is loosely coupled via a small value capacitor to Q2, a common source buffer formed with another MPF102 FET.

From here the signal is further buffered by the feedback amplifier formed with 2N3904 transistors, Q3 and Q4. This buffer stage doesn't have any gain, but has the more important role of providing a low output impedance drive. The buffer output is fed to a low pass filter composed of L3, L4 and the 820 pF capacitors. The resultant output signal is very low in harmonic content.

A 7808 voltage regulator supplies 8 volts to the oscillator and FET buffer, while the final buffer stage is fed from the main DC supply rail. Ample decoupling is used throughout the circuit ensuring a low impedance supply rail and minimising instability.

Construction

Take an 8 mm diameter white "Biro" plastic pen barrel and cut a 35 mm length. Drill two closely spaced 1 mm holes about 10 mm in from either end. These holes are used to secure the winding tails, and are drilled at an angle to make it easier to feed the wire in through one hole and out the other. Take a 1.5 metre length of 0.25 mm diameter enamelled copper wire and thread one end twice through the two holes at the start end of the winding, and pulling tight. Carefully wind on 50 turns ensuring the turns are tight and lie side by side. Hold the winding in place with finger and thumb and take the loose end of the wire and loop it twice through the 1 mm holes at the end of the winding and pull tight. Cut the ends to leave tails about 50 mm long.

In the prototype I found there was no need to coat the winding to prevent it from moving.

The brass screw requires an extension

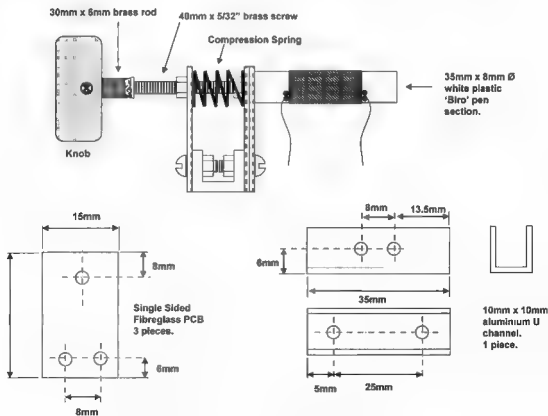


Figure 2 Circuit diagram of the variable inductance oscillator.

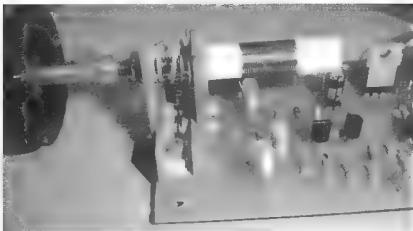
piece so that a standard knob can be fitted. Solder a 30 mm long section of brass round rod to the head of a 40 mm long 5/32" brass screw (Ed: a 4 mm screw should work). Check that the assembly is straight and rotates true. This may take a couple of goes before you get it right. Ideally, if you have a lathe and the skills, turning the whole assembly from a single piece of 6 mm diameter brass rod would be a much neater approach. I should apologise here for mixing imperial with metric units, but my hardware store doesn't stock metric brass screws.

Take a 30 mm long piece of 10 mm by 10 mm aluminium channel and drill four 3 mm holes on either side for the PCB pieces and two mounting holes on the channel bottom.

Cut three 15 mm by 30 mm pieces of single sided fibreglass PCB. Clamp them together and file the edges smooth. While keeping the pieces clamped together, drill a 4 mm tuning screw clearance hole and two 3 mm mounting holes. You should now have three identical pieces.

Mount one piece of PCB to the aluminium channel with 6 mm long screws and nuts so that the copper side faces outwards. Take one of the other pieces and carefully ream out the 4 mm hole until it is a push fit for the coil former. Screw the two remaining pieces to the other side of the channel with 8 mm long screws and nuts, ensuring that the piece with the hole for the former is on the outside and that both copper sides face towards the channel.

Run a brass nut halfway along the tuning screw and pass it through the hole in the single PCB piece. Run a second nut onto the screw and adjust the position of the nuts until they rest against the copper face of the respective PCB pieces. Hold the assembly steady and solder the nuts to the PCB pieces. Withdraw the screw and insert the compression spring between the two PCB pieces. Hold the opposing PCB pieces between thumb and finger and apply slight pressure to move the PCB pieces parallel again. Insert the tuning screw through both nuts and remove the hold from the PCB pieces. You should now feel some resistance to the rotation and any sloppiness should be gone. At this stage you can add the knob and adjust the spring tension to suit by altering the type or length of the spring.



A view of the completed variable inductance oscillator.

Push the coil former into the PCB piece with the large hole. Check that the tuning screw sits in the middle of the former, and that the winding loops inside the former don't foul the screw, and then glue into position. The whole assembly can now be attached to the oscillator PCB with 3 mm screws and nuts and the coil tails soldered to the relevant PCB pads.

To aid in frequency stability, it is advisable to install a shield to cover the coil and oscillator circuit. The prototype used a box shaped shield constructed from tinfoil (salvaged from a fruit tin), and secured and grounded through 4 PCB pins soldered to each corner.

As stated earlier, the dimensions of the tuning coil and oscillator capacitor values in the prototype were for a frequency range of 3.8 to 4.0 MHz. Obviously if a different frequency range is required the number of turns on the coil and the capacitors will probably need changing. Note too that the oscillator frequency varies slightly with the screen fitted, so you will need to take this in account when determining the final number of turns.

Frequency Readout

The idea of this article was to describe the mechanical details of the tuning mechanism and circuit for a variable inductance oscillator. To be of practical use some kind of frequency readout is required. I incorporated a PIC based frequency counter and 2 line LCD display in my rig. However a more simple approach is to use a PIC chip with

audible Morse output. Designs and kits for these types of readout can be found on the Internet. For those interested I would be happy to supply details of my frequency readout design, or indeed any details of the QRP rig itself.

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A "Noise Tracker" receiver for 144.455 MHz AM

Drew Diamond VK3XU

It seems that a 22 kV aerial line runs down just about every second or third street in suburban Melbourne, and all the main roads in semi rural areas (like mine) have high-voltage feeds. Unfortunately, if the lines are not maintained in good condition, they inevitably deteriorate and become noisy.

Faulty insulators and surge arrestors are not the only cause of trouble. Any item of loose or poorly bonded pole hardware can create noise by arcing. For example, a common problem occurs when a timber cross-arm brace fixing bolt works loose (due to shrinkage of the timber pole and/or vibration), which opens a small gap where arcing may occur in dry weather, resulting in broadband radio noise.

When lodging an interference complaint with the local electricity supply company, it greatly helps if you can positively identify the actual faulty pole.

By various means we can usually find the general area (beam headings, or driving/walking around with an AM radio, etc.). But for the "closing-in" stage, directionality improves as we go higher in frequency.

Fortuitously, 2 metres (144 - 148 MHz) is (in my experience) a rather good band for tracking radio noise, being sufficiently high in frequency to allow us to use a reasonably dimensioned "fox-hunting" style 3-element Yagi antenna, for which many patterns exist.

An ordinary 2 m FM receiver is of limited use in noise tracking - AM is much better. Some hand-held scanner radios do offer AM (see also Bryan Ackerly VK3YNG's ARDF material in Reference 1). However, those wishing to have a go at making their own little dedicated "noise tracker" AM receiver, please read on.

Super sensitivity is not required (indeed, it is not desirable). An ability to hear down to perhaps 5 microvolts has been found quite adequate. Nor is good selectivity or image rejection necessary, which greatly relaxes the usual design criteria for a receiver! The prototype can easily detect a 5 microvolt 50% modulated AM signal. Rejection of the 143.545 MHz image is poor. In this



Photo 1 - The "Noise Tracker" receiver clipped to the user's belt.

instance it does not matter, for we are only interested in noise. Interestingly, the receiver does a good job of "slope" detecting FM signals too.

Circuit

Many experimenters will remember the ZN414 AM radio chip, sadly now obsolete. Rapid Electronics (UK) produce a worthy replacement, the MKT484.

The MKT484 is only workable to about 3 MHz (Reference 2), being intended primarily as an AM broadcast band TRF receiver chip (in which application it works well [Reference 3]). To receive signals on 144 MHz, we need to "heterodyne" the desired frequency down to some lower frequency. A simple superhet receiver may be formed by preceding the MKT484 with a ubiquitous NE602 chip as mixer.

Some signal input selectivity at

144.455 MHz is provided by two coupled resonators L1 and L2 at the input to the NE602 mixer (Figure 1).

The local oscillator signal at 144.000 MHz is extracted through a series tuned tank L3 as the 6th harmonic of a 24 MHz TTL square-wave output from an ordinary clock oscillator assembly. Intermediate frequency (IF) shall be 455 kHz by use of an ordinary "transistor radio" IF transformer on the output side of the '602 mixer.

Residual IF signal exists, together with detected audio, at the output of the MKT484, so a rather large decoupling capacitor (100 nF) is recommended by the chip maker. Additionally, a 1 mH (1,000 μ H) choke was found necessary at the input of the LM386 audio amplifier chip (the MKT484/LM386 combination tends to become regenerative or "super-sensitive" if insufficient decoupling is employed).

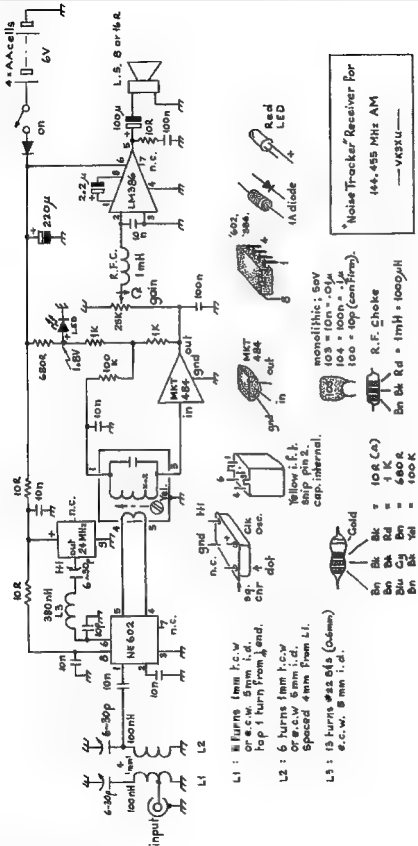


Fig 1 Circuit of the "Noise Tracker" receiver for 144.455 MHz AM

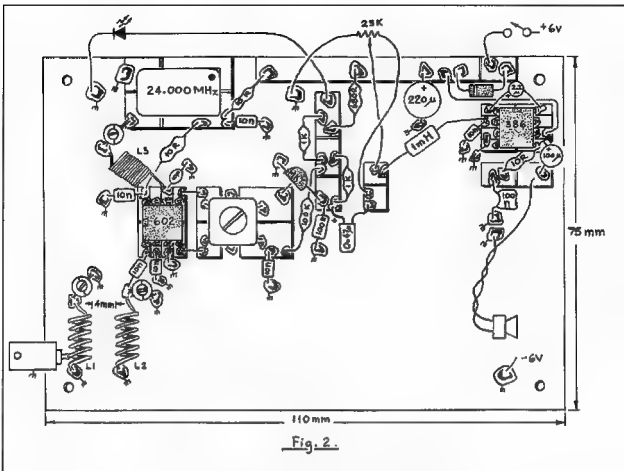


Fig 2 – Suggested circuit board layout for the receiver.

Construction

The receiver should be housed in a die-cast or similar metal box. My neatly fitting “paddyboard” circuit board (Reference 4) measures 75 x 110 mm. A sheet-aluminum clip may be fabricated so that the gadget may be attached to the user’s belt, as illustrated in Photo 1.

A suggested circuit board layout is pictured in Photo 2 and Figure 2. The layout allows for an internal miniature speaker. The NE602 (or SA602 or NE612) is fitted upon the copper side of a 19 mm x 4-strip “substrate” of Vero board, which in turn is super-glued (sparingly), copper side up, upon the main circuit board. Remember first to separate the pins each side of the Vero with a shallow (junior) hacksaw cut. Take care when soldering the chip that pins do not poke right through and risk shorting to the ground foil.

The LM386 may be fitted into an IC

socket, which in turn is soldered upon a Vero substrate as described above.

A 17 mm x 24 mm four-land substrate accommodates the 24 MHz clock oscillator, which must be positioned near the NE602 as shown in Fig. 2.

Pin 2 of the IF transformer must be snipped to prevent it from shorting to pin 3. The IF can lugs are soldered to foil in the gap shown in Fig. 2. Set the slug to about mid-range, it requires no further adjustment (unless you wish to receive other than 144.455 MHz).

The MKT484 has a maximum supply of 1.8 V dc, which is derived in this instance from the constant voltage drop across a red LED. The LED may be positioned in the side of the box to serve as an “on” indicator.

A 6 V battery supply of four type AA cells may be conveniently accommodated in a 4-cell holder. Mine is attached to the box with two carefully placed 2 mm countersunk screws and nuts. Battery

wires are carried into the box through a 3 mm countersunk hole adjacent the holder’s top.

Operation

Visually inspect your soldering for quality and accuracy. Look particularly for solder bridges between Vero tracks and clean up with solder-wick as necessary. Check that all polarised components are correctly oriented.

Apply battery power. The LED will glow. With the gain potentiometer fully clockwise, you should hear just a soft hiss, indicating that the set is “gamy”, and probably working. First adjust the oscillator series tank trim capacitor for a perceptible peak in hiss.

If you have access to a laboratory signal generator, apply a 50 % modulated AM signal of initially about 50 µV to the receiver’s input via 50 ohm coax cable. Carefully adjust the two input trim caps for maximum signal (not peak noise).

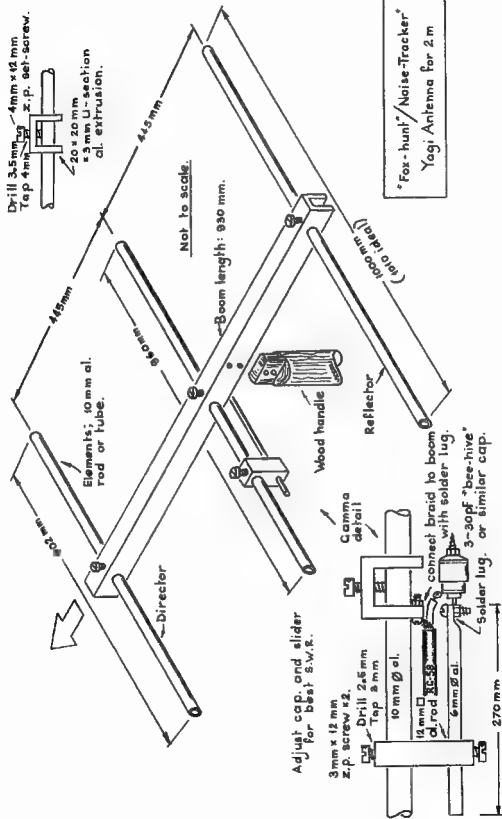


Fig 3 - Suggested fox-hunting style hand-held Yagi antenna for use with the receiver.

Drop the signal generator's level and re-tweak all three trim caps in turn. When properly tuned, you should be able to easily hear 5 μ V or less.

A "Leader", or similar, service generator will also do, but you will probably need another 40 dB or so of additional external attenuation on the output (set for minimum level) to obtain a suitably low level signal.

Antenna

A suggested foxhunting style hand-held Yagi antenna is shown in Fig. 3. My model was built directly from the tables provided in Reference 5. The dimensions shown are for 145 MHz, which permits the antenna to be used also as a handy portable antenna for 2 m FM work.

I have used "10 mm x 1 mm x 1 m Metalmate" aluminium tube from Bunnings for the elements. Theoretically, the reflector should be about 1,010 mm long, but the tubes are supplied only in 1 m lengths. The 10 mm shortness does not appear to materially affect performance.

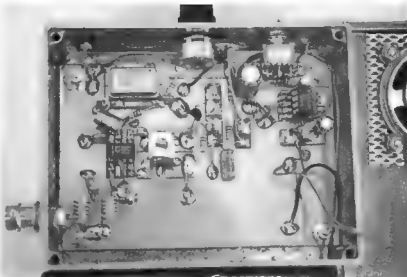


Photo 2 – A view inside the receiver case showing the suggested layout of the components.

The boom is made from a 930 mm length of U-section aluminium extrusion from the off-cuts bin at my local merchant.

I have a preference for gamma matching 50 Ω coax into driven elements; with two variables (capacitor and slider) it

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is possible to adjust these for a low SWR. As well, there are numerous (possibly) simpler patterns out there. Do have a look at the site in Reference 1, and explore some of the interesting links listed.

In actual use, when tracking noise (after first locating the apparent approximate area concerned), you should find that (generally) it is possible to hear the noise from as far as two or three pole spans away. Simply point the director for highest noise level (Photo 3). Try both vertical and horizontal polarization as you walk towards the noise source. Reduce or increase gain as required.

When the suspect pole has been pinpointed, have a good look at the hardware mounted thereon. It may be that a stick, or possum/bird body part is caught there, or a tie-wire is loose. You may even (at night) be able to see and/or hear some arcing or corona. Any such additional information would be helpful when reporting the fault.

Parts

It happens that most of the prototype components were purchased from my local Jaycar store, including die-cast box (HB 5067), battery holder (AS 3000), MK484 chip (ZK 8828), 25 k miniature pot, IF transformer (coil set of 4; LF 1050), trim caps (RV 5716) and 1 mH RF choke (LF 1546). However, similar suitable items are also available from our usual suppliers, including Altronics, DSE, Semtronics, Rockby and Electronic World.

Additionally, 24 MHz clock oscillator modules may be obtained from Semtronics (www.semtronics.com.au). NE602 (or SA602 or NE612) chips may



Photo 3 - The receiver and Yagi in use locating a noise source.

be ordered from Starlight Electronics (Andrew Blight VK3BFA, 03 9802 4329).

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A simple modification to boost battery output in handheld transceivers

Dr Hank Prunckun VK5JAZ

Problem

Handheld transceivers generally come from the factory with specially-built rechargeable battery packs. These are generally sealed cell constructions that provide the necessary output voltage to operate the radio at maximum transmit power. If a lower transmit power level is desired, this is usually adjusted by selecting a lower wattage through one of the radio's switches, or software settings. UHF CB radios and amateur band handhelds both operate using this same principle.

However, some radios come with a battery case that accepts either AA or AAA cells. The total voltage required to reach maximum transmit power using

these cases is calculated by multiplying 1.5 volts per cell by the number of "slots" in the battery case. For instance, a radio that requires six volts has four slots. This is fine and the radio operator will achieve maximum transmit power if cells rated at 1.5 volts are used (such as alkaline types).

If rechargeable cells are used, such as nickel metal hydride (or the older nickel cadmium types), which are rated at 1.2 volts per cell, a voltage drop of 1.2 volts (that is 0.3 volts per cell by 4 cells, equals 1.2 volts) will be experienced. The radio operator now has available, not 6 volts, but 4.8 volts. In terms of transmit power, this could amount to a 20% decrease.

Is there a way around this problem without having to use expensive, non-rechargeable alkaline batteries?

Theory

A typical battery case accommodates a number of batteries arranged in either a series or a parallel configuration (or sometimes a combination of the two). This configuration is designed to deliver the required voltage when using 1.5 volt cells. But the battery capacity of these devices is always an issue, as radio operators constantly want to operate for as long as they can without recharging. This situation can be easily improved by buying the largest capacity nickel metal hydride (NiMH) batteries that one

can afford (say, around 2,200 mAh). However, as battery cases are essentially plastic "shells" that house the required number of cells (rated at 1.5 volts), there is no mechanism that will allow additional cells to be inserted if the voltage is reduced by the use of NiMH batteries.

At 4.8 volts, my bench-top test of the TH-22A produced just about 1.4 watts output. At 6 volts, the power level jumped to around 2.6 watts. These results are consistent with what one would expect for that increase in voltage. Given that the Revex W540 has crude scale readings for power

Method

Inserting (electrically) an additional 1.2 volt NiMH cell into a battery case can be accomplished in a straight-forward manner by wiring its holder as shown in Figure 1. This circuit consists of a 1.2-volt NiMH battery with wire leads from the terminals of a plastic battery holder (eg. Jaycar catalogue number PH-2903) to a small, thin, double-sided piece of circuit board. The circuit board is then inserted in-between the terminal connectors of the battery case and one of the batteries sitting in its slot, as shown in Figure 2. This, in affect, adds an additional battery in series with the existing circuit.

The aesthetics and mechanical aspects of holding this additional battery in place can then be left up to the operator. How it is done will be based on the need for permanency, the ergonomics of the particular radio being used, and the tools and resources available at the workbench. The PCB insert may require some shaping to fit a particular battery case, and care is needed to insert it with correct polarity.

Results

I constructed the modification described above and tested it on my Kenwood TH-22A handheld. According to the technical specifications in the manual, the radio is rated at 5 watts output if a full 12 volts is applied. If AA cells are to be used, Kenwood supplies a BT-9 case that houses 4 cells, thus providing 6 volts (using alkaline cells) or 4.8 volts (using NiMH cells). The results of the comparison between transmit power level at 6 volts and 4.8 volts was noticeable using a Revex W540 SWR/power meter connected to a 50 ohm dummy load.

At 4.8 volts, my bench-top test of the TH-22A produced just about 1.4 watts output. At 6 volts, the power level jumped to around 2.6 watts. These results are consistent with what one would expect for that increase in voltage. Given that the Revex W540 has crude scale readings for power

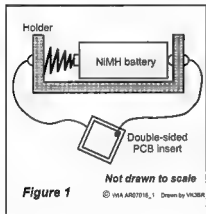


Figure 1

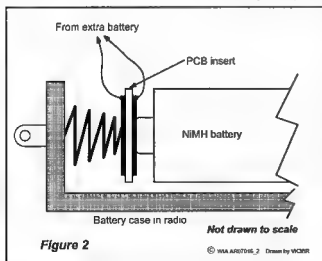


Figure 2

Scouts Radio Activities Group and C Cubed

Gerard Rankin VK5ZQV

Firstly, what is 'C Cubed'!

In this Century of Scouting celebratory year, the public can join in activities previously open only to the Scouts themselves, by participating in the fun filled activity known as C Cubed (Cybertrak Centenary Celebration).

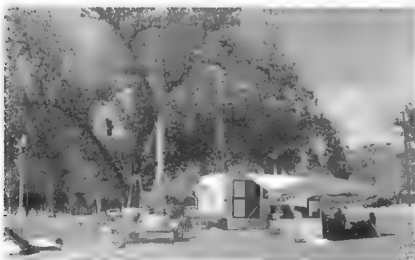
On Saturday, 24 February, SRAG, the Scout Radio Activities Group, provided communications and ran the 'Air Waves' activity at the C Cubed event, celebrating the Centenary of Scouting in 2007. The attached photo provides some idea of our setup on the day showing our communications van, mast and marquee. The marquee provided a display of radios, the repeater and a computer displaying APRS plots.

Our involvement introduced more than 150 Joeys, Cubs, Scouts, Venturers and Rovers from all over South Australia to radio communications and through the "Air Waves" activity provided opportunities to the participants for some hands on operation.

We had many enquiries about upcoming JOTA stations, prospective Foundation Licence candidates and a lot of interest in our displays of radio equipment and operating systems including APRS running live at the event. The WIA Grant Scheme provided some support for this project. Many 'WIA Calling CQ' brochures were handed out to interested individuals as well.

Overall it was a great day with lots of positive feedback, and it has definitely raised our collective profile.

ar



A simple modification to boost battery output in handheld transceivers continued

increments in the decimal range, there was some estimation required on my part. Nevertheless, in terms of order-of-magnitude, the results demonstrate what can be achieved through this simple modification.

Conclusion

It has been asked, in another context, "does size matter?" But the question has

relevance here too. Certainly battery supply voltage affects the maximum transmit power of handheld transceivers, so therefore "bigger is better."

If a radio operator substitutes rechargeable NiMH batteries for alkaline cells, then the transmit power will decrease. One way to overcome this is to insert an additional 1.2 volt cell in series using this modification. It is

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most effective where there are four (4) or more cells in series, as the loss of 0.3 volts per cell compounds as the cell numbers increase. In the same manner, an additional 1.2 volt cell could be added (electrically) in series with other batteries in the battery case, up to the specified voltage for the radio

■

Silencing the Toyota 100 series diesel RFI

Bob Tait VK3XP and Phil Wait VK2DKN.

I have been aware that the late model Toyota diesels were particularly noisy electrically, with much of the interference coming from the injector drivers housed in a box on the passenger side of the engine. Some of the radio installers of the popular Codan and Barrett radios usually running on the RFDS, or favourite 4WD club frequency, have stated openly that if you want to use the radio turn off the engine.

Well after a visit to the Parkes Radio Telescope and a meeting with Phil Wait VK2DKN and a bit of idle chatter, I asked Phil if he had experienced the noise problem with his Toyota 100 series diesel. He said he had but after a bit of mucking around trying to locate the noise source he found most of the noise was coming from the injector driver box. Well off he trotted to his local Jaycar store and purchased some ferrite to see if putting some of these around the cable coming out of the box to the injectors would fix the problem.

Well it did the trick, with the noise level dropping from an unbearable 10 over the 9 on 40 metres to about $\frac{1}{2}$ an 'S' point.

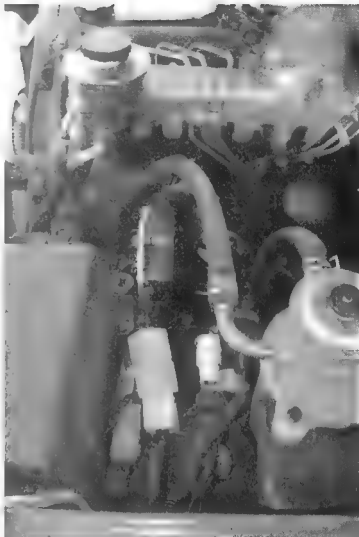
We went for a quick burn around the streets of Parkes with the audio at full bore; the noise was just audible, but you had to listen hard... Well done Phil.

Up with the bonnet and a picture for the article to go in AR!

A nice easy fix to a difficult problem.

Be aware that this will not necessarily fix other diesels, as some vehicles use FET drivers and the introduction of some 'L' into the circuit changes the slew rate of some circuits resulting in changed vehicle performance. If you have a similar problem and have a fix let us know through the pages of AR.

ar



You can see the white beads placed on the cable coming from the injectors.

WIA Comment continued from page 3

TAC to FTAC to NTAC

overtake the time they can give to amateur radio. Sometimes things just go to the wrong place and no one knows about it.

We ran into this sort of problem with the qualifying of Assessors, and now with the Learning Facilitators. We have found it very much better to process the applications through the office, tracking

where they are at, making copies as required for the different people involved and being able to answer questions as to where things are.

So, as well as clearly defining a procedure, we have hopefully put together a procedure that will, in the long run, ensure a better result.

So, please look at the WIA website

and find out more about NTAC. And, if you want to license or change the licence of a repeater or beacon, also look at the website, understand the procedure and use the template provided.

Yes, the people who give their time to NTAC are skilled and experienced. They add value to amateur radio and the WIA.

IT

Amateurs keep Targa Tasmania on track

Roger Nichols VK7ARN
WICEN Coordinator (South) Tasmania

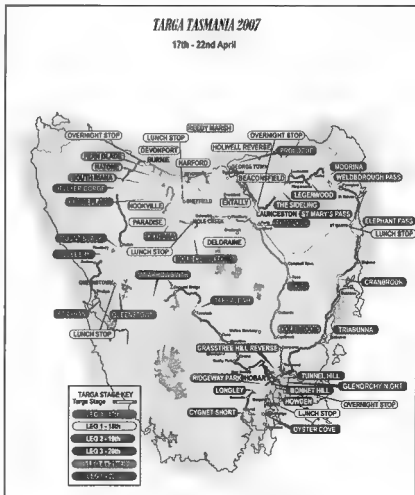
Targa Tasmania is a tarmac car rally, with a focus on historic and classic cars, which runs over five days and covers much of Tasmania. For many years, amateurs have formed the core of the communications team, this year deploying repeaters on 26 stages and providing 42 SOS and other radio points. The team included 22 amateur and sixteen other operators. Close to 300 competitors covered more than 2,100 kilometres, including 450 kilometres on 42 competitive stages. Many on the communications team covered similar distances, though at less favourable times of day (and at a slower pace!). Normal day time hours were spent 'on the job', followed by 'after hours' travel to the next day's location. The first stages each day involve teams being set up and ready for operations as early as 05:45 am. But, it can't be all bad because some teams have been coming back for more for 10 years.

In 2007, a new dimension was added. Most amateurs with an interest in APRS often comment that it is good to see mobile stations on the APRS map. The great majority of stations simply sit there going nowhere. (It would be a worry if they did move because most are QTH's and digipeaters!) Targa Tasmania provides a virtual feast of moving vehicles and therefore an opportunity to make APRS a little more interesting. So, the organisers were approached to see if they were prepared to co-operate. They were, willingly – after having a taste of APRS on the Tasmanian Subaru Safari (AR Nov 2006). That event was relatively easy to cover, being confined to an area of the southern forests of Tasmania over only two days.

An audit of resources decided that two vehicles could be tracked (increased to three at the last minute) and the Clerk of the Course was given the choice. He chose cars Zero and Fast Sweep with the Tour Leader added later. Targa includes a Tour category for those who wish to drive their classic cars at a more sedate pace along closed roads, thus enjoying the cars' capacity beyond what is normally available on public roads. This group precedes the competitive cars on many, but not all, stages. Their timely passage is critical to overall event timing, so knowledge of the location of the Tour Leader is important to Rally Command. The Zero car is the last of several safety checkers and precedes the first competitor. Its completion of a stage, or the major part of longer stages, is a determinant of the OK to go. The Fast Sweep follows the last competitor

through the stage. In addition, the 004 car of Ron VK7ZRO, who is the Targa Support Services Manager, carried a

tracker. 004 travels the full course ahead of the field. The display of the position of each of these on a screen



The Targa Tasmania 2007 route.

TVI High Pass Filter with Braid Breaker.



An inline TVI filter with Braid Breaker.

A large amount of TVI can travel down the outer braid of Coax as well as the centre conductor. The braid breaker isolates the centre conductor and braid from the TV/VCR/DVD. The High Pass filter cuts in at 50MHz. This filter has -80dBm attenuation at 40, 80 and 160 Metres.

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in Rally Command in Hobart gave the Clerk of the Course strategic information and provided a great challenge to the APRS'ers.

Two thirds of Tasmania is reasonably well covered by APRS. Hill top digipeaters are sited on Mt Barrow (1,400 m) in the north east, VK7RAA, Snug Tiers (400 m) in the south east, VK7RHT, Mt Read (1,100 m) in the west, VK7RWC plus Table Cape on the north west coast, VK7RAC. Several fill-in VK7 digipeaters also operate, including RAD in Hobart, DIK-1 in Ulverstone and ABB-1 near Penguin. Observations of travellers over several months gave an indication of the APRS coverage of the Targa competitive stages and the transport stages between them. There were some big gaps, especially on the east and west coasts.

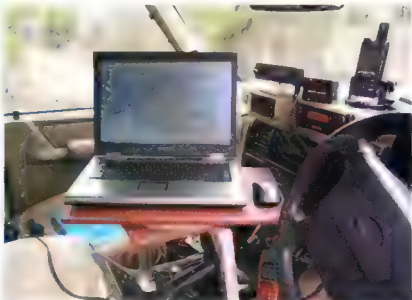
Plans for two other hill top digipeaters were advanced. Dion VK7YBI built, licensed and deployed VK7RVP (1,100 m) near Valentines Peak to fill the gap between the west and north-west coasts. He also built the VK7REC digipeater which Joe VK7JG, with NTARC (Northern Tasmanian ARC) members deployed on Snow Hill (970 m) to provide additional cover on some of the east coast and to fill a 'dodgy' gap in the midlands between Hobart and Launceston. These will stay in place as part of the Tasmanian "digi-fleet".

RF connections between north and south are spasmodic. RAA on Mt



The VK7MBD truck-mounted 12 metre telescoping mast.

Barrow can get into RHT on Snug Tiers reasonably often, but not so in reverse due to the much lower power (4 W) of RHT. Therefore, I-Gated traffic was



VK7ARN's APRS field monitoring station.

going to be integral to maintaining state-wide cover. Rally Command would draw its filtered data from an APRS server. Dick VK7DIK runs an I-Gate fed from RWC, Danny VK7HDM from RAD, Paul VK7KPG from RAA and Dave VK7DC from RAC. Unfortunately the hackers got into Danny's network but Scott VK7HSE was able fill the hole via RHT.

The primary focus of the exercise was 'big picture' – the general movement of the three strategic vehicles around, or along, each leg (day) of the rally. However, more detailed coverage of each stage would be a 'nice to have'. To this end, it was decided to deploy fill-in digis at some of the stage voice repeater sites. Up to four were deployed each day.

Perhaps the biggest challenge came almost at the end. Mt Arrowsmith is the longest and geographically most remote of all the stages. It is 48 kilometres in length, winds between high mountains and is remote from hill top digis. RWC on Mt Read is the nearest but there are

high barriers between Mt Read and the Mount Arrowsmith stage. It was known that the voice repeater site on the Strahan stage had good access to Mt Read. The next stage, Queenstown, had given mixed coverage from its repeater site direct to Mt Read but was expected to reach the Strahan repeater site OK. Targa voice cover for the Mount Arrowsmith stage is achieved via the Forestry Tasmania and Parks networked repeaters on Mt Owen and Mt King William.

The remoteness of the stage precluded thorough testing, so a contingency was planned.

This was to place a battery operated digipeater as high on Mt Owen as access and logistics would allow (involving an even earlier pre-dawn start, possibly snow, and recovery afterwards). Permission to



John VK7ZZ and Peter VK7TPE with John (centre) at sunrise on Mt Owen.



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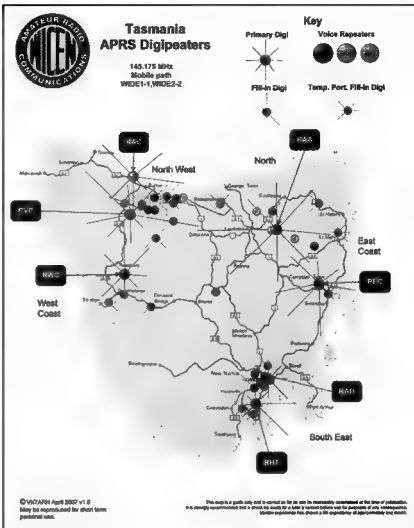
access the locked mountain track was obtained. A digipeater would also be deployed at a Targa Radio Point located 32 kilometres into the stage at the Frenchman's Cap helipad

So, how did it go? The Clerk of the Course reported that the system was very helpful with only one hole of any consequence.

Coverage of most stages and transport legs was excellent. Unfortunately, the two hardest areas, the upper East Coast and Mount Arrowsmith were frustratingly missed. The East Coast because of the failure of a PRM radio used on the Weldborough Pass digipeater (lost Tx) and, even more frustratingly, on Mt Owen because of what is suspected to be something as simple as a BNC connector not correctly attached to a radio. Set up checks of both, including TNC LEDs and local RF output, gave the appearance that all was well, but later bench tests found output measurable only in milliwatts. A lesson learned the hard way!

By way of compensation, the deployment of the digi on Mt Owen was exciting in its own right. A reconnaissance in daylight located a suitable site which was revisited pre-dawn, in thick mist, the next day. The track is very steep, four wheel drive only. Most of the way up, nothing was visible on one side, mainly because there was nothing there – nor was there for a very long way down. The most base was jammed between rocks and guys attached to more rocks. The digi and battery were enclosed in a waterproof bag with adequate ventilation. Sunrise occurred whilst the job was being completed giving spectacular lighting of the cloud tops below and the sheer rock faces above. A retreat, with a stop for eerie photos down in the clouds, returned the intrepid explorers to the bitumen. Unfortunately, further access was barred until the rally had passed, so the ailing digi stayed ailing.

This successful amateur event was largely enabled by the excellent cooperation within the Tasmanian amateur radio community. A list of all concerned would be long. However, special mention has to be made of Dion VK7YBI who built both RVP and REC digipeaters and deployed RVP with Steve VK7FWWF, and to mountain man Joe VK7JG, for technical input and REC



Targa Tasmania's APRS digipeater network.

deployment. The input of Scott VK7HSE must also be recognised. He provided me with much guidance until illness made it impossible. It was great to have him out of hospital and back on board for the event. VK7s Brian BW, Bruce MBD, Peter TPE and the writer, in addition to their normal Targa roles, established digis at, or close to, their primary job locations each day. Also thanks to the I-Gate owners, mentioned earlier, who maintained the feeds.

Equipment notes

Trackers

Zero car – mouse GPS, TinyTrak3 Plus, PRM (25 W) – alternate paths TAS3-3 and WIDE1-1, WIDE3-3
Sweep car mouse GPS, TinyTrak3

Plus, PRM (25 W) – alternate paths TAS3-3 and WIDE1-1, WIDE3-3

Tour Leader – mouse GPS, TinyTrak3, Maxon data radio (4 W) – alternate paths TAS3-3 and WIDE1-1, WIDE3-3

(Thanks to Mal at Twigg Solutions who express despatched a mouse GPS to enable the Tour Leader to be included with the tracked vehicles.)

Fill-In digis

- 1 x MFJ1270B, PRM (25 W)
- 1 x MFJ1270B, IC-207H (50 W)
- 1 x PacComm TINY-2, PRM (25 W)
- 1 x Kenwood TM-D700
- 1 x Elcom microUSB TNC, IC-208H (50 W)

ar

Stop the whining:

Construct a high-pass braid-breaker filter

Dr Hank Prunckun, VK5JAZ

Problem

Recently I installed a Kenwood 144 MHz mobile transceiver (TM-261) in my car. Until this time I had used a Kenwood TH-22A handheld for mobile work. However, a fixed, high power radio for the 2 metre band offered more reliable transmission and far better reception, especially on simplex frequencies.

The only problem was that the radio I installed produced a high-pitched whine when the engine was running. The whine varied in pitch as I accelerated and decelerated. It was audible on both receive and transmit, making it intolerable for me and for those I talked to on the air. But there was no whine when the engine was off. A bit of reading in a few old ARRL handbooks convinced me that these symptoms were consistent with interference from the car's alternator.

Theory

In order to avoid spurious noises entering a radio, it should be isolated from all sources of interference. When installing the TM-261 transceiver, I connected the radio's power cable directly to the car's lead-acid battery. This avoided interference entering the radio via the electrical system as the battery is an excellent filter of unwanted signals. It also provides some level of voltage regulation and over-voltage protection by providing the radio with pure DC.

The chassis of the radio is another potential entry point for unwanted signals; however when I mounted the rig in my car, I fitted it into the compartment between the two front seats. As this was made from a high impact plastic, there was no problem – it was electrically isolated.

The final entry point for interference is the antenna system. My installation comprised a stainless steel antenna mount that I fastened to the car's boot and a quarter-wave antenna from Mobile-One Pty Ltd (catalogue M144-1). The coaxial cable ran directly to the SO-239 socket at the back of the radio.

My first attempt to quell the whine was to install a line filter in the positive

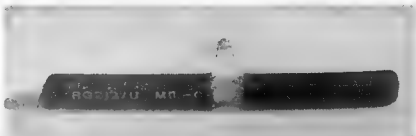


Figure 1: Braid exposed and cut, ready to solder

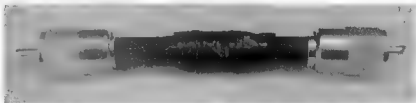


Figure 2: Final filter assembly

(active) side of the power cable. I had an old Radio Shack heavy-duty filter that was marketed for 27 MHz CB mobile radios. As it was rated at 20 amps, I installed it. But it had no effect. I followed this by adding a 50 V 10,000 μ F electrolytic capacitor after the coil filter to form a pi-type filter between the positive and negative wires of the power cable. Again, there was no change to the whine. Clearly the battery was doing its job of filtering the DC. As there was no need for these devices to remain in the circuit, I removed them.

This led me to test the antenna cable. As soon as I disconnected the PL-259 plug at the back of the radio (therefore breaking the connection of the earth braid but leaving the centre conductor in circuit) the noise stopped. Another rummage through the pages of several radio handbooks revealed that this was what was termed "an earth loop." It appears there were two paths to earth created at DC and audio frequencies: one from the car chassis to the radio through the antenna braid; and a second from the car chassis to the battery and then to the radio. The alternator whine couldn't get to the radio via the power cable (as the battery was taking care of this path), but

not so via the antenna cable.

I needed to stop the whining. But how?

Method

The easiest and cheapest way to achieve this was to install a "braid breaker" filter in the coaxial cable. The filter needed to pass the VHF frequencies between the radio and antenna system, but trap the lower frequency white noise generated by the alternator. A simple ceramic capacitor of a value around 2,200 pF would be sufficient.

The construction of this filter could be done in a number of ways. For example, it could be enclosed in a small plastic box with an SO-239 socket at each end, similar to high-pass filters used for HF transceivers. Note that it should be a plastic box and not a metal box, as the intent is to "break" the earth braid, not ensure continuity of the circuit.

As there was not a lot of room in the console between the two front seats where my Kenwood was installed, I opted to fix the capacitor to the outside of a short piece of 50 ohm RG-213 coax cable. This was done at a point where I had stripped the cable's insulation and removed about one centimetre of braid

(see Figure 1). As my soldering skills and poor eyesight prevented me from ensuring the capacitor's leads were very short, I choose a smaller value capacitor. The reduced value compensated for any additional capacitance introduced by the longer leads (I settled on a 470 pF ceramic capacitor)

A PL-259 plug was then fitted to each end of the coax and the capacitor protected by covering it with a stiff piece of plastic. I sealed all of this with a generous amount of electrical tape, which helped to prevent the coax from bending and either cracking the capacitor or breaking the soldered joints (Figure 2).

I inserted the filter at the radio end of the antenna cable at the point where the cable connected to the radio. Here it is invisible, weatherproof and could not be physically damaged by accidental pulling or tugging on the cable.

Results

With the engine off, I tested the filter and noted no difference in reception between having it in place, or without. I connected an SWR meter and tested the radio in transmit mode. The SWR reading was no different to the base measurement I took before inserting the filter (i.e. it read about 1.1:1 at all frequencies between 144 and 148 MHz).

I then started the engine and observed with delight the clean crisp audio I had experienced when the engine was off. The whining had stopped. I did a few test transmissions and noted the SWR was the same as the reference measurement across the entire 2-metre band.

Conclusions

Alternator whine on any mobile two-way radio is not only annoying but excruciatingly painful to the ear. An easy and inexpensive way of eliminating this type of noise is to insert a high-pass braid-breaker filter in the antenna cable. This is simply a capacitor spanning the broken braid and housed in a suitable construction to protect it from damage and inclemency. The total cost of this project is less than \$10 if all the parts are purchased new. If bits are salvaged from old lengths of coax cable and discarded circuit boards, it could cost you as little as the time spent to build it.

The result clean, crisp audio is worth far more than either of these expenses.

A tester for capacitor and diode leakage

Drew Diamond VK3XU
Photos: Andrew Diamond.

A lot of the work we do involves components that operate at rather high voltages at radio-frequencies, mains frequencies and DC. Yet few (if any) of the popular ready-made meters are capable of testing for high-voltage capacitor leakage, or peak inverse voltage (PIV) of diodes.

Early radio and electronics workers had none of the clever instruments we take for granted, such as digital multimeters,

frequency counters, antenna/network analysers, etc.

Nevertheless, they did have a trick or



Photo 1 – The front of the Capacitor Leakage Tester.

two up their sleeve which we would do well not to allow to fade into obscurity. One of these is the good old neon lamp tester (Reference 1, pp 81 - 92)

Fortunately, small neon lamps are available from at least one well-known supplier, and so the neon may be "re-invented" as a valuable and (perhaps) surprisingly sensitive leakage test indicator. The prototype instrument finds use in testing for leakage in ordinary (non-polarised) capacitors, high-voltage electrolytic capacitors, and diodes. Indeed, any component that must display high insulation resistance under stress (voltage) may be non-destructively tested to at least 500 V DC.

Circuit and Operation

Two generic type 2155 multi-tapped step-down transformers are connected back-to-back to supply a "secondary" voltage that is adjustable in steps. Rotary switch S1 may be set to any one of six positions. Two 470 nF (0.47 μ F) capacitors and two diodes operate as either a half-wave rectifier (lo), or voltage-doubler circuit (hi). High/low switch S2 thus provides a coarse voltage adjustment; in the "lo" position, DC source voltage may be adjusted from about 150 to 300 V, and in the "hi" position the range is about 300 to 600 V. A 0 - 1 mA meter indicates the source voltage (as 0 to 1 kV using the existing 0 - 1 mA calibrations, so 600 V reads 0.6 mA).

To test ordinary (non-polarised) capacitors with S3 in the "non-polar" position, charging current (for the capacitor under test) is supplied through a 470 k Ω resistor in series with a neon lamp. When momentary (push-button) switch S4 is closed, the test capacitor will charge, causing the neon to glow briefly. The smaller the capacitor value, down to 47 pF or less, the briefer the glow.

Should there be significant leakage current, the neon lamp will continue to glow, or flicker. Good capacitors must show no residual glow, at least up to a source voltage of 75 V beyond their rated working voltage (the neon "strikes" at about 90 V, and extinguishes at about 75 V, so the actual potential applied to the capacitor will be about 75 V below the source voltage).

When S4 is released, the charge held

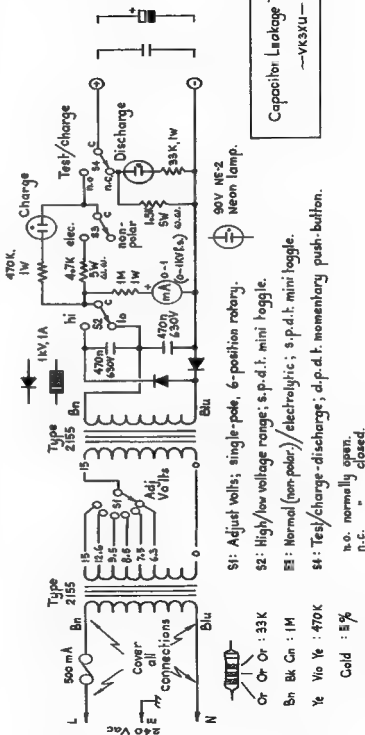


Fig 1 – Circuit diagram of the Capacitor Leakage Tester.

by the capacitor is dumped into the 1.5 k Ω wire resistor, across which is a second "Discharge" neon, that will glow briefly. A capacitor may thus be tested through numerous charge/discharge cycles.

Electrolytic capacitors - even good ones - will usually show some leakage current (Reference 2, pp 192 - 193). In addition, being rather large in capacity, they may never charge through that 470 k Ω resistor. When S3 is in the "elec" position, charging current is increased by shunting the 470 k Ω and neon combination with a 4.7 k Ω wire resistor, whose value was determined empirically after testing many and various typical radio type capacitors ranging from 1 μ F to 470 μ F.

A good electrolytic capacitor will give a bright glow upon test/charge (whereupon the source voltage will dip momentarily), then gradually fade and extinguish as the capacitor charges more fully, and will almost reach the actual test (source) voltage.

When S4 is released (Discharge) the second neon should glow brightly. The cycle may need to be repeated several times in order to "form" capacitors that are new, or have been unused for some time.

Diodes may be tested with S3 in the "non-polar" position. The cathode (band) of the diode must connect to the positive test terminal. On "Test/charge" you may see a tiny brief glow as the diode's junction capacitance is charged, whereupon there should be no further glow (to within about 75 V of rated PIV).

No part of the testing circuit is connected to chassis, thus preventing the operator from receiving a "bite" should accidental skin contact be made between one of the test terminals and ground. Fingers must be kept off the component leads during testing.

Construction

My tester is housed in a re-cycled steel box with sloping panel (believed to be ex Telecom - a donation from VK3AX's junk-box) measuring 155 mm x 175 mm x 230 mm HWD. Any similar sized, or slightly smaller, case, metal or plastic, should serve.

Component layout is not at all critical. A suggested method is for the resistors and capacitors to be accommodated upon an "8-way" (16 tag) tag-board. Just the tops of a few thus mounted components

can be seen in Photo 2. If your front panel is detachable (like mine - see Photo 2), leave an adequate "goose-neck" of additional hook-up wire length to permit any later repair/modification work.

Mains earth only shall connect to chassis ground, and all wiring connections on the mains side must be adequately covered to prevent accidental contact.

Parts

It happens that most of the prototype's components were purchased from my local Jaycar shop, including 2155 transformers (MM2002), tag-boards

(HM3320), 0.47 μ F/630 V Greencaps (RQ5247) and NE2 neon lamps (SL2690).

Similar suitable parts are also available from other vendors, including Altronics, DSE, Semtronics, Rockby and Electronic World.

Reference

1. *Practical Wireless Service Manual*; F. J. Camm, 11th ed. (1960). Newnes.
2. *Radio(tron) Designer's Handbook*; F. Langford-Smith, 1963 ed. Amalgamated Wireless.

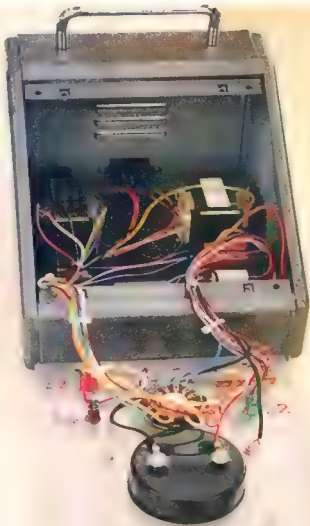


Photo 2 - The Capacitor Leakage Tester showing the detachable front panel.

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VX-170 2m 5W handheld	\$199
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FT-2800M 2 m Mobile	\$279
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IC-V8000 2 m Mobile	\$349
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IC-R5 H/H Scanner w/batts & chgr	\$299
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VK2

Tim Mills VK2ZTM
vk2wi@ozemail.com.au

Clubs

The Blue Mountains ARC has just conducted their annual Winterfest, which due to difficulties in securing the date became 'Springfest' on Saturday the 1st September. The BMARC meet on the first Friday evening at Glenbrook.

The Oxley Region ARC held their AGM last month with a minor shuffle on the committee. President is Alan Nutt VK2GD; Vice President Henry Lundell VK2ZHE; Secretary Jim Neil VK2VIV; Treasurer John McLean VK2KCE; committee Bill Sinclair VK2ZCV, Craig Martin VK2ZCM and Bill Brooke VK2ZCW. Last month the club activated the club callsign - VK2BOR - by taking part in both the RD and Lighthouse weekends. The Oxley Region, based at Port Macquarie, serving the Hastings Region of the Mid North Coast, have the monthly meeting on the first Saturday afternoon and informal evenings on the second and fourth Fridays. Meetings are held at the SES building in Gordon Street, near the town centre. A weekly

workshop is conducted on Wednesday morning, where members work on the overhaul and upgrade of the 2 m and 70 cm equipment for the two repeater sites, VK2RPM and VK2RCN. The repeaters are used for the various weekly nets.

WICEN (NSW) will be holding their AGM this month at the Ryde Eastwood Leagues Club in West Ryde.

The ARNSW Home Brew Group will next meet at Dural on Sunday the 30th September, in the afternoon. Their activities follow the morning T&T function. This will be 'show and tell' for the various and final entries in the 80 metre AM transmitter building project. The group also meets monthly on the first Tuesday evening at McDonalds, North Parramatta. There is a net on the third Tuesday evening on VK2RWI 7000.

ARNSW

The recent move of the office function to the Dural site is proceeding well. As most contact is via either email or the telephone, which can be handled

off site, call diversion is in place on all three numbers to the Secretary, Brian VK2TOX, or in his absence, to the message bank. Although it was announced in "AR" last month that there is a new office phone [02 9651 1490], the old office number [02 9689 2417] is still operational but will gradually be phased out. The 'freecall' number [1800 817 644] is still available for country member inquiries. The latest Sydney 'white pages', being distributed at the moment, has the old listing and it will take until the next edition to get it away from the casual caller. In this edition, the address entry shows the Harris Park post office box [9432] in place of a street address, which will also remain operational until next year's box renewal period. There has been some recent difficulty with the email address [vk2wi@ozemail.com.au] or at least with the provider, with slow or lost messages. FAX is available on 02 9651 1661 but it is only checked a couple of times a week. Callers to the VK2WI station on Sunday should use its phone: 02 9651 1489.

A reminder that ARNSW - the trading name of the company - WIA NSW Division - is a state-wide club. While the operations may appear to be city based, it is a state wide operation by medium of the news bulletins with the voice and web site. Membership is invited from any VK2 amateur and an application form can be down loaded from the web site www.arnsw.org.au

Further discussions have been held with the local Council over the proposed storage shed and there is hope of a favourable outcome - and DA - by submitting a new location on the site that gives a greater offset from the side boundary. Members of the ARNSW committee are investigating what type of building could be suitable to develop, as stage two, for meeting and office facilities. Due to site constraints brought about by other constructions, the original VK2WI building concept can not be extended. It is currently in the shape of a 'T' and the original concept was to be an 'H', by adding the second 'T'.

Coffs Harbour Radio Expo

Hosted by the Mid North Coast Amateur Radio Group

Sunday 20th January 2008

St Johns Church Hall,

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8.30am Start

Trade Displays, Disposals, Door Prizes, Club Displays, Home Brew Displays, Satellite tracking, Tower Displays

**Special new equipment
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Yummy Hot food and cold drinks Entry \$5.00 per person

More info on www.mncarg.org or phone

Gary Ryan VK2ZKT 02 66552990

The present building, of double brick construction, now 50 years old, has stood the test of time very well.

Work has been in progress over the past few weeks to erect a new boundary fence at VK2WI. It commenced at the front and will in time encase the entire five acre site. The rear portion of the site slopes down from the ridge and has dense timber growth. The entrance will be wider (6 metres) with a second gate for long vehicles and when there are the T&T days. It has also been an opportunity to clean up a lot of the fallen timber which will provide more parking. Work is also proceeding to lay underground feeds to the various antennas.

The last Sunday of this month (30th) will be the next T&T at the VK2WI site, 63 Quarry Road, Dural. The activities commence at 10.30 am. The big and final T&T for the year will be held on Sunday the 25th November.

VK2WI

News submission to VK2WI News is requested in the printed form by email to vk2wi@ozemail.com.au. Clubs, groups and individuals are invited to use the service to cover their past, current and future activities. There is a wider listening audience than you think. Listen

at 1000 and 1930 on Sunday, either direct from VK2WI or the many relay sources throughout VK2 or read the script on the ARNSW site at www.arnsw.org.au

The operation of the 60 metre linking transmission during the morning news from ARNSW is going well, even if some interstate observer was apparently confused. ACMA made contact with a report submitted to them that it was 'drifting' and on the wrong sideband (LSB). As previously advised, the transmission is generated by a commercial grade transmitter, a licence requirement, is crystal locked and is in the Upper Side Band mode, the format for operation on a commercial channel. If one looks at the frequency register, VK2RW1 shows it has an assigned frequency of 5425 kHz but as there is a 1.5 kHz negative offset in the carrier frequency, it is announced as being on 5423.5 kHz. Reports on the coverage footprint are most welcome by either the VK2WI callbacks or an email to vk2wi@ozemail.com.au. The 5 MHz transmission is currently only made during the 'VK2WI News' portion of the morning transmission, as the VK1WIA format does not allow the easy insertion of the required identification. 5 MHz is filling the gap in coverage between 80 and 40 metres. No evening operation is possible as the propagation

characteristics would extend the range beyond its intended fill in role allowing it to be heard beyond Australia

The apparent confusion of the 'sideband' brings back a story of the early days of the VK2RSY beacons when the Department passed on a report that the callsign being sent was all 'gibberish'. The problem with the FSK transmission was quickly solved when it was suggested that the observer switch their receiver to the other sideband.

Currently the VK2RSY beacons on air are 28.2615 CW; 50.289 CW and 1296.420 FSK MHz. 2 m and 70 cm wait on new transmitters and relocated antennas. 3699 kHz, while acting as a Morse training aid, can provide grey line and 80 metre propagation indications.

The 160 metre antenna was repaired recently, broken off at the feed point, when a tree branch fell and caused the halyard system to jam. It required the services of an agile rigger - Tom VK2YQG - to ascend the pole. Part of the site renovations will be to further improve the feed point height. The 160 dipole is configured as an inverted vee. The transmitter - currently an AWA J54-800 - operates in the AM mode. Callback reception is in LSB.

73 - Tim VK2ZTM.

VK3

Amateur Radio Victoria News

Ross Pittard VK3FCE

Website: www.amateurradio.com.au

Email: arv@amateurradio.com.au

Changes to the broadcast

The Amateur Radio Victoria Council meeting last month reviewed matters related to putting to air via its VK3BWI network of the WIA weekly VK1WIA broadcast on Sundays.

A major change is that it now goes to air at 10.30 am on Sunday mornings instead of 11.00 am, the callback procedure on the 2 m repeater VK3RMM has been refined and a 40 m callback re-introduced.

Amateur Radio Victoria has recently completed upgrades to its VK3BWI HF transmission facilities costing more

than \$3500 for new feeders, multiple antennas, the commissioning of a new 80 m transmitter and frequency change for the 40 m transmitter.

Following this upgrade at its cost, the state-wide organisation also decided to re-introduce the 40 m callback on Sunday mornings, which is in the capable hands of experienced 40 m operators Colin VK3LO and Laurie VK3AW.

We encourage all HF operators to check in to our 40 m callback, particularly Foundation stations and interstate listeners. The HF Frequencies are 3615 kHz, 7158 kHz and 10130 kHz,

which are in addition to the 2 m repeaters VK3RMM Mt Macedon and VK3RML Mt Dandenong, and the 70 cm repeater VK3RMU Mt St Leonard.

For those stations who wish to send reception reports via e-mail these are welcome at broadcast@amateurradio.com.au

Regular listeners will also have noticed a change to the callbacks after the broadcast through the VK3RMM repeater

The new format is that our Broadcast Officer, Grant Stowell VK3VIM, conducts a check-in by 'callsign'

News from...

only and this is followed by the F-Troop Net Controller who conducts a callback for anyone wishing to make a comment or who has a question about the broadcast.

Digital D-STAR

Like many others on seeing an Icom advertisement in *Amateur Radio* magazine last month, you may have wondered exactly what is the 'D-STAR' technology available in some of the company's transceivers.

D-STAR (Digital Smart Technologies for Amateur Radio) is a digital voice and data protocol developed for use in amateur radio.

In addition to the over-the-air protocol, D-STAR also provides specifications for network connectivity, enabling radios to be connected to the Internet.

D-STAR includes a facility to find, by callsign, a station that is on air, and Internet connected D-STAR repeaters form a global network to enhance that capability.

This is the result of Japanese funded research administered by the Japan Amateur Radio League that investigated digital technologies for amateur radio to take the Amateur Service truly into its second century.

The JARL published the D-STAR standard in 2001, and in doing so made the protocol open for D-STAR systems to be built using both commercial and homebrew equipment and software.

While Icom has taken a lead on the technology by extensively testing the

protocol and developing its products, other manufacturers will follow.

Icom transceivers are available that can run on 2 m and 70 cm both digital voice and analogue FM. A digital data stream using 23 cm is also available.

The Darwin Amateur Radio Club VK8DA already has an Icom D-STAR repeater on the 2 m, 70 cm and 23 cm bands. It's expected to be introduced in Victoria this year, followed by New South Wales, Queensland and elsewhere in early 2008.

RadioFest 2008

The Centre Victoria RadioFest will be held at the Kyneton racecourse on Sunday 10 February, 2008. Within minutes of announcing the date all major commercial traders confirmed their bookings.

Keep a watch on the website radiofest.amateurradio.com.au for the latest developments. The organising committee with representatives from the Central Goldfields and Midland Amateur Radio Clubs, and Amateur Radio Victoria, are meeting early this month to plan the event program.

For inquiries email radiofest@amateurradio.com.au, mail address Box 2354, Bendigo Mail Centre 3554, Fax: (03) 5442 8025 Phone: (03) 5442 8022.

Lighthouse activation

There has been another successful involvement by Amateur Radio Victoria

in the International Lighthouse & Lightship Weekend.

About a dozen, mainly Foundation Licensees, showed an interest in activating the VK3WI callsign on the weekend of 18 and 19 of August at the historic Williamstown Lighthouse and Time-Ball Tower and Lighthouse at Point Gellibrand, Williamstown.

More details can be found on our website.

Congratulations to all who took part and in particular thank you to the event coordinator, Terry Murphy VK3UP.

Education activities

The latest Foundation Licence training and assessment weekend held in August saw seven candidates being found competent for the qualification to take out an amateur station licence.

Enrolments are now open for the next weekend at Box Hill North which is 15 and 16 September. Do you know someone, a relative, friend or work colleague who could be interested in becoming a radio amateur?

For inquiries, to enrol or obtain the Foundation licence manual for \$19.50, contact - Barry Robinson VK3JBR 0428 516 001 or arv@amateurradio.com.au

Another of the Amateur Radio Victoria's Standard Licence Bridging Courses began early this month with a number of Foundation Licensees eager to upgrade under the tutoring of Kevin Luxford VK3DAP.

Eastern and Mountain District Radio Club

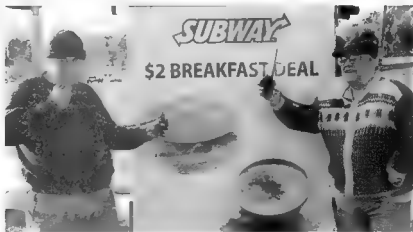
Some members of the EMDRC in Melbourne have been walking on a regular basis in an effort to tame their waistslins.

The walk is four km from the QTH of Lionel VK3NM to "The Toy Shop", otherwise known as Strictly Ham in Bayswater.

But as readers can see there are some distractions along the way which have to be manfully resisted.

However resistance is futile at the toy shop: an Icom IC-718 and a Kenwood TL-922 found new homes, after much coffee was drunk!

The photo shows Lionel VK3NM (L) and John VK3ARK (R).



Geelong Amateur Radio Club

SHF operation by the GARC

Most amateurs operate in a comfort zone overarched by HF operation at one end and VHF at the other. There are however individuals in every radio club that align more solidly to the amateur radio prime directive of experimentation. The GARC is no different; be it antenna design, software development or operating in the SHF spectrum. The latter is of particular interest to David VK3QM and Chas VK3PY. Although commercial antennas can be adapted to bands up to 10 GHz, the RF generation is decidedly home brew and they have developed a particular expertise in this area.

Early in 2007, David VK3QM/p5 set up a station on Kangaroo Island with Chas VK3PY and with Ken VK3PX setting up reciprocal arrangements in the Barrabool Hills operating on 2.4 GHz with 25 watts SSB. The distance achieved with two way communication was over 600 km.

At regular intervals during the year from Barrabool Hills, operating on all bands from 144 MHz to 10 GHz, VK3QM with VK3NX have made contact with The South East Radio Group, VK5SR, at Mount Gambier over a path of some 300 km.

GARC planned activities for the last two quarters of 2007

In addition to technical presentations, the GARC has a programme of diverse subjects lined up which include:

- Presentation to the GARC by the Australian Ladies Amateur Radio Association, ALARA; currently some 15 % of the amateur fraternity are ladies
- Visit organised by Greg VK3VOX to the CFA to understand its operational activities and communication strategies during emergencies
- With a conservative estimate that 20% of Australians suffer from type 2 diabetes, Lee VK3PK is making arrangements for a presentation at the GARC by Diabetes Australia for the club, targeting members with waistlines exceeding 100 cm!
- The club president Ian VK3VIN is liaising with The Greater Geelong City Council for a presentation to the GARC members on the planning and building requirements and related procedures for the erection of antenna towers
- Arrangements have been made for the GARC's presence at the

Geelong Council's All Abilities Festival at the Geelong Museum. This is of particular interest to Ian who is a legally blind operator. Some 12 GARC amateurs will be in attendance during the day.

- Tony VK3JGC has a planned circuit of the PROBUS clubs in Ocean Grove to provide a PowerPoint slide show on Amateur Radio and its evolution and integration into the computer and internet era.

Repeater Status

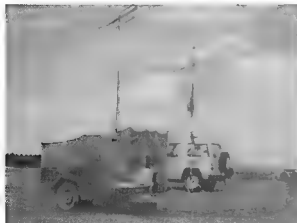
VK3RGL on 147.000 MHz is fully operational with some software additions to assist users.

VK3RGL on 439.575 MHz is currently off air undergoing receiver improvements

VK3RGC on 147.125 MHz is currently off air undergoing software development.

The GARC Website

The GARC website at www.vk3atl.org is once again operational but under reconstruction. However contact details and other club activities may be sourced there.



This picture, taken at Barrabool Hills in January 2007 shows a 6 m antenna below a 23 cm antenna on the trailer whilst on the 4WD there are antennas for 2 m, 70 cm and 13 cm.



David VK3QM's portable set up on Kangaroo Island

VK5

Adelaide Hills Amateur Radio Society

Christine Taylor VK5CTY

This has been a busy month for AHARS. We had a most interesting meeting given by a fairly new member, Denis Haseldine, who spoke about the type of security Australia has to have in place in various parts of the world.

Not a lot of detail of equipment used etc. could be discussed, but there was plenty of material of interest Denis could pass on. A most enjoyable talk.

On the evening of Saturday 21st July, a most successful Mid-year Dinner was held, attended by more than 50 people. The food was excellent, the talk flowed freely and a good night was enjoyed with friends.

For the last couple of months, John VK5EMI has been negotiating for another Assessors Course to be run in Adelaide. Over the weekend of 4th and 5th August, 13 people attended this course which will relieve the problem of insufficient Assessors to service the whole state. A number of those attending were from country areas, which should help more candidates sit near to home.

During the same weekend another Examination program was run by Sasi VK5SN. Two applicants sat to upgrade to the Advanced Licence and 2 others sat for the Foundation Licence. All passed!

Don't forget the buy and sell

AHARS will be holding their annual Buy and Sell on Saturday 17th November in the Westbourne Park RSL Hall on Goodwood Road.

A number of commercial dealers will be present and there will be lots of bargains as amateurs have a 'clean up'. Come along and exchange their junk for your junk. Or better still, for your money!

The AHARS Buy and Sell is traditionally the biggest and best occasion for amateurs to meet old friends and exchange all the latest news as they wander around making their purchases.

PUT IT IN YOUR DIARY NOW!



David VK5OV, his XYL, Meg VK5YG and Colleen, XYL of Wally VK5TW.



Christine VK5CTY and John VK5EMI



There's an old adage that goes something like "If it's not raining, it's pouring." Since last month's column I've found myself appointed one of three QAC members as well as becoming the Nominee and President of my Lawn Bowls Club. Fortunately my bowls club is one of the smaller ones in the Far North and does not require too much hands-on operation.

Queensland Advisory Council

I'm sure there will be a general announcement elsewhere in this magazine regarding Advisory Councils but I am pleased to announce here that, with effect from 01 October, the following members will form the QAC element of the WIA Advisory Council:

- Don Wilschefski VK4BY
- Kevin Johnston VK4UH

- Harvey Wickes VK4AHW
- Ross Anderson VK4AQ

The geographic locations of this panel are pretty well distributed and it has been proposed that Ross will generally cover the Far North and North Queensland area, Don the Central Queensland area, Harvey looking after Wide Bay, Sunshine Coast and Darling Downs and Kevin covering the Brisbane and the Gold Coast areas. This is not as yet set in concrete, but the proposal seems sound to me. Hopefully I will be able to advise who will be the new Chair of the committee in next month's issue of AR.

I would like to do a small pen picture item on each panel member in a future edition of AR.

J R "Roscoe" Anderson, VK4AQ

Dalby and District ARC

Club Secretary, Neil VK4NF, advises that the following positions were filled following the AGM which was held on Sunday, 5th August.

- President: Ricky Lammas VK4NRL
- Vice President Reg Kerslake VK4AQU
- Sec/Treasurer Neil Holmes VK4NF
- Publicity Officer Judy Holmes
- Repeater Co-ord. Ricky Lammas VK4NRL
- WICEN Officer Reg Kerslake VK4AQU

Membership fees of \$25.00 and \$15.00 (Conc) will remain the same for the coming year.



During his trip to the USA and the Dayton Hamvention earlier this year, Nick Wating VK4YT paid a visit to Fair Radio Sales in Lima on their open day Nick VK4YT (R) with Roger K0RMK at Fair Radio Sales. See Nick's brief report in the VK4 notes on page 37.

Queensland Club Presidents' Luncheon

As has been the tradition for many years, the Queensland Club Presidents' Luncheon is to be held in Brisbane again this year on Saturday 13th October at 12 noon. Unfortunately a venue had not been decided at the time of submission of this article but advice will be well promulgated before the event.

Each Club President, or a representative of the club, is invited to attend the luncheon.

WIA President Michael Owen, WIA Director Ewan McLeod and WIA Secretary Ken Fuller will be in attendance, so this would be an ideal time for club representatives to bring themselves up to speed on WIA affairs. The luncheon will also provide an opportunity to meet the incoming QAC members who will also be in attendance.

Club representatives planning on attending the luncheon should contact Don Wilschefskei VK4BY at qac@wia.org.au or Ken Fuller at vk4kf@wia.org.au.

South Coast Amateur Radio Club

It was lovely to catch up with wandering members Rudi Heesemans and XYL Margaret when they dropped in to a recent club meeting. They have just returned to their home QTH after travelling extensively through north and south Australia. A world tour covering America, Europe, Greece, Malaysia and other areas was to follow. Both Rudi and Margaret are well and wished to be remembered to all their Amateur Radio friends.

Get Well wishes are sent to Roddie Mineo VK4VA, Jan Kavanagh XYL of John VK4JLK and Rod Bradnam VK4CRB/ZL1CD, who have all been poorly of late.

Congratulations to Mervyn, Jannett, Marlene and Peter on passing their Foundation Licence recently and we look forward to hearing them on air just as soon as their call signs are issued.

Townsville ARC

This super-active club has been involved with many and varied projects recently with two springing readily to mind. First there was the "Egads! My Project Doesn't Work. What Have I Done" night and their screen printing afternoon. The latter project saw a number of TARC,

WICEN and Convention merchandise produced including hi-viz vests and shirts, ladies' tops, polo shirts and men's underpants. The afternoon was such a success that another is planned at the end of the month.

Tablelands Radio Group

Mike VK4MIK expects to have had a very successful ILLW weekend at Grassy Hill Lighthouse in Cooktown by the time this article has been printed and advises that a full and complete report will appear in AR.

New Authorised Vertex Standard Dealer

It is pleasing to note that RDXG Communications has begun trading and will offer the full range of Yaesu amateur band radio equipment to amateur radio operators on the Atherton Tablelands in FNQ. Partners Gary VK4WT and Jeff VK4BOF, located in Ravenshoe and Innisfail, are also agents for RDXG portable towers, RF Industries, ACG Scalar, Mobile One and BP Solar. The dealership will service the areas bounded by Tully to the south, west to Croydon and north to Cooktown.

I am sure that every amateur in this generally out-of-the-way part of the country wishes Gary and Jeff every success in their venture.

Rydge's Capricorn Car Rally

Leigh Wilson, VK4YLW

On Saturday, 14th July, 2007, "Rydge's Capricorn Rally" was held. This car rally is organised by the Central Queensland Motor Sporting Club and sponsored principally by Rydge's Capricorn Resort, which is located on the beachfront, just north of Yeppoon on the Capricorn Coast, in quite a beautiful location. It provides ideal support for the successful running of the rally, which is a round of the Queensland Rally Championship. Stages were held on grounds adjacent to the resort, as well as in the nearby Byfield State Forest, and approximately 40 cars and crews were entered. Feedback from competitors is that this is a well-liked and well-run rally, which will continue to grow in popularity.

As in previous years, Rockhampton and District Amateur Radio Club (RADAR) provided radio communications. Twenty operators attended, comprising representatives of the Mackay, Gladstone, and Bundaberg clubs, as well as RADAR Club members. In previous years, the

local CREST had provided UHF CB communications support, but due to that organisation being dissolved at the end of June 2007, all radio communications this year were in the hands of amateur operators. Some of CREST's surplus gear was put to good use by the amateurs.

Rally base was set up at the resort from where all stages were controlled. The radio controllers and the rally directors were co-located there. UHF CB channel 10 simplex was used for Rydges area stages. The RADAR portable UHF repeater on 438.625 MHz was used for stages in the Byfield forest area to report to rally base, and the local channel 3 UHF CB repeater was used as a common communications channel for all parties. Both UHF repeaters were located on a high hill site overlooking the location. Some use was made by amateurs of channel 6500 in the 2 m band; local use was made of simplex UHF CB channels; and the local 2 m and 70 cm repeaters on Mt Archer could also be reached from most locations, if required. Radio communications for the rally were provided from before 7.00 a.m. on Saturday until approximately 8.30 p.m. that evening.

The day dawned bright and clear but cold and there was frost in the area. The day remained clear with a cool breeze, but became cold again at sunset. It was also the time for the mosquitoes to come out! The rally was a good exercise for amateur radio operators to set up a portable station and communicate. The minor problems encountered did not stop communications and lessons learnt will be put to good use for next year's event. There was an operator located at the start and at the end of each stage, and for them the time went quickly as there was always something to be done. All in all, an enjoyable day was had by all. RADAR Club would like to thank the out-of-towners who took the trouble to travel some distance to participate and help out.

Don VK4BY, was co-ordinator. Clive VK4ACC, Nev VK4KNB, Leon VK4KLL, and Frank VK4FLR spent time before the rally servicing and installing the repeaters. Amateur operators on the day were Don VK4BY, Lyle VK4LM, Clive VK4ACC, George VK4AJL, John VK4AJ5, David VK4DJC, Douglas VK4HGD, Jim VK4HJD, Julieann VK4JAG, John VK4JWH, Barry VK4KKN, Leon VK4KLL,

Nev VK4KNB, Mike VK4LMB, Kurt VK4TKU, Marcel VK4TMH, Leigh VK4YLW, Andrew VK4FFAO, Bob VK4FRFC, and Bruce VK4FSNA.

Ohio HAMVENTION

Recently I mentioned that I hoped to have an article on the 2007 Dayton, Ohio, HAMVENTION. Thanks to the good offices of popular FNQ Amateur and now retired Chief Pilot of the Cairns based Royal Flying Doctor Service, Nick VK4YT, here it is, in his own words.

A visit to HAMVENTION

Nick Watling VK4YT

In May this year I visited the USA to stay with my daughter in Boston and to visit relatives and friends in New York and Phoenix. The trip also allowed me to realise a long held desire to attend the Amateur Radio Convention (known as HAMVENTION), in Dayton, Ohio.

The Convention is held every year, in May, at the Hara Arena Sports and Convention Centre. This year it ran from Friday 18th May through Sunday 20th May and attracted thousands of amateurs and radio enthusiasts from the USA and all over the world.

Being a modest collector of old military radios and boat anchors in general, I was also attracted by an open day held at Fair Radio Sales in Lima, about 50 miles north of Dayton. This open day was held on the Thursday immediately preceding the Hamvention. I was able to indulge my fascination in a big way with shelf after shelf and room after room filled with old military radios. Unfortunately, under new US rules governing the export and shipping of ex-military radio equipment, the transport costs have become prohibitive. So it was a case of "look at it and weep" for me.

I met up with two amateurs from Ireland who were staying at the same Dayton Airport hotel and we were able to share the taxi fare costs and at the same time, enjoy each other's company.

I had been warned that in order to best appreciate the extraordinary "Flea Market" it was advisable to arrive as the gates of the stadium opened up at 0900 on the Friday. What an amazing site it was - covering acres of ground with every type of table, tent, back of truck and temporary selling site that you

could imagine. The range of electronic equipment covered everything from the 1930s to the present day.

One incident comes to mind that will demonstrate the size of the market. At one table I found an item that I had been looking for. Because I had a number of small items already, I asked the stall holder to retain the item and I would pick it up again later in the day. When I went to find the stall I could not do so because I became disorientated amid the plethora of similar stalls! So the vendor finished up retaining the item and my \$5.00 as well. If I had bothered to check his stall number on the pavement beside him, I would have had a much better chance of finding him again by referring to the market layout map in the convention guide book. Lesson learned the hard way. (Maybe if he reads this article he will on-forward the part, Nick HI).

I came across a mint condition ART-13 aircraft transmitter (Hams over 60 years of age will remember it) for only US\$200.00 - a very reasonable price. Unfortunately under the new regulations the unit would have had to have been shipped by air at the prohibitive cost of US\$750.00. Another good idea gone west.

Current radio and associated equipment was on display inside the centre and was also an amazing experience and any attempt by me to adequately describe it would be doomed to failure. It was interesting to see the Australian firm Emtron was represented demonstrating its range of excellent (and expensive) linear amplifiers.

Forums were held on a whole range of amateur radio subjects. Everything from restoring old radios to computers in amateur radio was covered. These forums, where the speakers really knew their subjects off pat, were well organised and attended.

The usual array of food and refreshment outlets was available and ran very brisk businesses. If you are a fan of hot dogs, hamburgers and donuts and coffee you would have been in your little heaven.

I can thoroughly recommend that, if at all possible, all amateurs should visit the Hamvention at least once during their lifetime. It is an amazing and rewarding experience. The next HAMVENTION will be held on May 16th, 17th and 18th, 2008.

Websites are: www.hamvention.org and www.daytonacvb.com

Radio Amateurs Old Timers Club of SA

The annual luncheon
will be held on

Thursday 25 October 2007
(12 noon for 12:30 lunch).

**Remember to bring your Seniors
Card.**

**Venue: Marion Hotel,
Marion Road, Mitchell Park.**
Public transport Bus M44, Stop 24.

*RSVP to one of the following
committee members before
22 October 2007:*

President: Jim McLachlan VK5NB.

Phone: 08 8294 2992

Secretary: Ray Deane VK5RK.

Phone: 08 8271 5401

Assistant Secretary: Ron Coat
VK5RV. Phone 08 8296 6681

Ray Deane, Honorary Secretary

Wagga Amateur Radio Club hosts Riverina Field Day

The Riverina Field Day will again be hosted by the Wagga Club over the weekend of October 27 and 28 at the club's rooms in Small St. Wagga Wagga. The Field Day commences on the Saturday evening with a dinner at the clubrooms. On Sunday doors open at 9am with the usual flea markets plus a number of Traders including ICOM through Wodonga agent Henry Radio.

This Field Day has a long history dating back to when it was known as the South West Zone Convention. Then it was hosted by many towns in the Riverina such as Griffith, Deniliquin, Young and even Grong Grong. This very popular country ham fest is nowadays hosted on alternate years at either the Twin Cities Radio & Electronics Club in Albury or the Wagga Amateur Radio Club.

So, keep this weekend free and plan to visit Wagga Wagga, City of Good Sports and Garden City of the South to catch up with old mates and make new ones.

VK7

Justin Giles-Clark, VK7TW

Email: vk7tw@wia.org.au Regional Web Site: reast.asn.au

North West Tasmanian

Amateur Radio Interest Group

NWTARIG held a general meeting on 28 July, special guest speaker was Peter VK2IY/7 who is the Club's Assessor. Peter spoke on a range of interesting amateur study areas giving simple methods of remembering the resistor colour code, inductance and capacitance phase relationships, and Pythagoras theorem to calculate the length of those antenna guy wires. Next meeting is 29 September 2007.

Northern Tasmania Amateur Radio Club

July 11th saw the author give an illustrated talk on the optical communications experimentation that Rex VK7MO and he have been doing along with a demo of some of the equipment. There was also an impromptu BPL update talk on what appears to be happening with BPL in VK7. The NTARC August meeting was a presentation by the Launceston Scanning

Group on what they are all about. The presentation included a demo of the latest scanning equipment along with some great sound clips that have been collected by the group. By all reports, another great presentation.

Radio and Electronics Association of Southern Tasmania

REAST welcomes Joachim, VK7FAAI, Ron Pedersen and Rod Douglas who were all successful in gaining their Foundation Licences. Congratulations also to Harvey VK7HLE who passed his Advanced Licence assessment and is awaiting his call sign that I understand will be VK7TED. REAST has confirmed arrangements for the first (of many) Standard Licence Training Courses. This is a 12-week course presented by a range of REAST members. Club station call-sign VK7OTC will be heard during the RD thanks to a big effort being put in by VK7s BEN, ZBX, ZMS and ZCR.

WICEN South was active in August with radio communications for the Southern Tasmania Endurance Riders safety checkpoints on the RD weekend and then operating VK7OTC on the International Lighthouse/Lightship Weekend station at the Cape Bruny lighthouse.

Mike Hawkins VK7DMH took us on a journey of discovery about process control and the associated technology. Mike gave some history of process control all the way through to a demonstration of the configuration of the modern 24 GHz radar instruments. Mike showed the configuration and flexibility of radar technology on the big screen. Mike finished up by commenting that Radar is an exciting area of instrumentation and it has opened up many other areas to accurate and consistent measurement for process engineering. However Mike reminded us that there is no such thing as an instrument that does everything... HIHI. A great talk, thanks Mike.

Silent Keys

Robert (Bob) Ellis Richards VK7KRR

(26 October, 1941 - 5 August, 2007)

Bob was born in Hobart but moved with his parents to Georgetown where he attended Georgetown Primary School and later Launceston Technical College. After schooling he joined Australia Post, where he worked for 23 years before taking an early redundancy.

From the early 1960s onwards, Bob was a member of the Army Reserve, being attached to 6th Field Regiment Signals Corp based at Milne Bay Barracks, Launceston, using some great old boat anchor rigs, e.g. No. 19 sets, 122 sets, 62 sets and the famous A510 portable set. He advanced with great achievement in the Army Reserve, obtaining an endorsed GII licence enabling him to command amphibious craft, AACO International, and other heavy rigid vehicles of which this licence gave him the rights.

Bob was an active CB'er in the "old days" before obtaining his Novice call

in 1983, VK7NRR. He worked HF and has a collection of QSL cards that would make anyone proud. He also loved UHF FM where he made many friends. In 1996, Bob gained his "K" call - VK7KRR. He was passionate about many different aspects of amateur radio, SSB, FM, packet radio and IRLP.

Bob was an enthusiastic member of the Northern Branch of the WIA and later the Northern Tasmanian Amateur Radio Club. Bob has held the positions of Treasurer/Secretary and then Treasurer, a position he held until his passing. He became qualified in later years as an accountant, studied by correspondence at home, a remarkable achievement indeed.

Bob's other great love was his miniature train. He was a member of the Evandale Light Rail & Steam Society where he would delight in loading his train with

children on the open days and running round the tracks.

During the last few years, Bob has suffered from indifferent health. Bob is survived by his wife of 39 years Roz, his 3 children Andrew, Louise and Katrina and grandchildren Trent and Keisha.

73 Bob. You'll be missed for a long time.

AI VK7AN & Graham VK7ZGG



Tom Moffat VK7TM

Tom was born in the United States. His father was involved with the design of the navigation equipment for the Jindivik program in the 50s, so it is no wonder that Tom ended up out here. Tom obtained electronic qualifications with the Bell Telephone Company. He initially worked in Victoria, as Chief of Staff for GTV-9. He moved to Tasmania with his wife Gael, in the early 70s, and became the Motorola sales and service agent for Tasmania.

I first met Tom when he and Gael were holidaying here in about 1973 and I was in Hobart visiting my parents for the weekend. Tom's radio was playing up and he called in to use my gear to repair it. We became instant friends, a relationship that has only deepened over the years.

We again met up on my return to Hobart. It helped that our wives were both from Queensland and had much in common. The Repeater Widows Club was soon in full swing as we worked on a number of amateur radio projects together, including the first amateur television broadcast of the weekly news, the first mobile television broadcast in the southern hemisphere, amateur or commercial and of course, the first VK7RHT, which we built together and was commissioned on Mt Wellington.

Tom soon became one of the best-known names in Australian amateur circles through his monthly columns in various magazines, an interest which became an occupation over the past ten years or so. Who will forget Moffat's Madhouse and his monochrome? Tom's

optometrist made it for him as he refused to wear reading glasses.



Drawn by Bob VK4WG*

Tom was a highly intelligent person who had an instinct for new technologies and took to computers like a duck to water. I wonder how many people built his weather satellite decoder over the years? He sold them in kit form and many yachters and amateurs were soon checking their own weather, long before sound cards and DSP hit the scene.

He also built an experimental robot known as the Tasman Turtle. Tom was never given the intellectual credit for the project and was too unassuming to object when others took the credit from him. For a time he worked for TVT-6, now Win TV, in Hobart, where his face was seen as a quirky news reporter with an American accent. Some of Tom's work, particularly at Macquarie Island, is still regularly used as file footage.

In the 1990s Tom returned to the USA where he lived north of Seattle until finally returning to Australia about 5 years ago. He was very proud when he



became a naturalized Australian.

In hindsight, I now think the signs of Alzheimer's disease, which was diagnosed early this year, were already showing through as he lived his last few years making very little contact with us and with little on air activity. Such contact as we had, did not portray the brilliant Tom of past days.

Tom died peacefully on Tuesday 31 July 2007, leaving Gael, his former wife, who continued to care for him as much as he would let her, two daughters, Jenny and Fiona, a son Steven and three grandchildren.

Farewell old friend.

Brian Morgan VK7RR

*Thanks for many years of *Moffat's Madhouse*, 137 articles published in three Australian magazine titles.

Bob VK4WG

Les Cooper VK7LS

(30/01/30 - 31/07/07)

Les was first licensed in the mid 1960s. At that time Les was working at the EZ Co in a non-radio trade and took a while to pass the written essay type theory exam. With persistence he first obtained an unlimited licence, as he passed his 14 wpm Morse prior to his theory. Les was a very active amateur involving himself in all aspects of the hobby, building and operating his own equipment, AM in those days, and showing real pride

and capability in his achievements. He operated all bands, including VHF, with his home built equipment.

Les's boyish nature and friendly smile will be remembered by all who have met him and was a characteristic that we will all remember. He was an active amateur right up until the time he was admitted to hospital, usually on the local 160, 80 and 2 metre nets from his Collinsvale home QTH.

Les was arguably one of the most active members of the "Tasmanian Sewing Circle" and made many friends through his regular "call ins" to that net. Much could be said about almost a lifetime of amateur operating by VK7LS, who through his love of the hobby and the many other HAMS with whom he had contact, made for a valued rewarding experience for us all.

Vale Les VK7LS

Dave VK7DM

QSL cards from the WIA National QSL Collection

Hon. Curator: Ken Matchett VK3TL
wiaqslcollection@wia.org.au

New prefixes and suffixes

The WIA would again like to express its thanks to the Austrian QSL Collection for its continuing support for our own National QSL Collection over many years. The Austrian QSL Collection is the largest QSL Collection in the world, holding over five million QSL cards, and is managed by Wolf OE1WHC and his group of volunteers. The WIA could never hope to match the enthusiasm for saving something for the future possessed by Austrian licensees. Amateurs over there even donate sums of money for the maintenance of the Collection.

Amongst the QSLs sent recently:

Argentina L49, L59. As previously pointed out, governments throughout the world tended to issue two-letter prefixes from the ITU's post-war prefix allocation. For Argentina this was LU



from the allocation LOA-LWZ. A new allocation with a single letter was issued quite recently. There are no fewer than seventeen single letter L prefixes in the WIA Collection, many with multiple numerals, e.g. L49.

Other QSLs include Ceuta EG9IC, France TM1X (IOTA EU-032), Scotland MMO-DFV/8, Arran Island (IOTA-EU123), Tunisia TS7N (IOTA AF-073) and Canada XM3AT (Queen's Golden Jubilee).

We are also in receipt of many of the German prefix zero QSLs such as DL0, DK0, DA0 etc. Almost all of these are special issue call signs, usually held by radio clubs or issued for the celebration of an event.

Sweden recently issued prefixes SE4CJY and SAØF. Also SJ5 and SJ0 were special prefixes used by club stations to commemorate the union between Sweden and Norway in 1905.

Multi-digital prefixes are really amongst us. Wolf has sent LY20040 (LY two hundred-40) commemorating Lithuania's membership of the EU. Finland OH2DZ/P (IOTA EU-140), Kaliningrad R750KG, Ukraine EO225EA, Norway: two unusual prefixes LD95N (end of maritime CW) and LI7ff, Bulgaria LZ81IARU having

a special callsign suffix (80 years of the IARU), Estonia ES85M.

In closing may I ask readers to bear in mind that the WIA seeks not only rare DX. We are not very likely to receive in the email DXCC QSLs that members have been chasing for years. They are not likely to donate these. (There are some that do, but we do not expect it.) It is what may be called THOSE OTHER QSL CARDS that we seek. These are the ones that you have not looked at for weeks, or even for years and years. They are sitting in a shoebox or in a filing cabinet. Again I say that they are never looked at on a regular basis. Would it be unkind of me to ask you to visit your Post Office, to buy a Post Office box and bundle those OTHER QSLs into it and post it off. You will not in any way miss them—and you'll still have all your good ones.

During the last few months work on the QSL Collection has become quite difficult. I really would appreciate your help with a generous donation. Postage as usual is fully refunded and acknowledgement made of your support.

Good DX.
Ken.

ar

S.A.D.A.R.C

**SHEPPARTON
HAMFEST**

**SUNDAY 9th
SEPTEMBER 2007**

**ST AUGUSTINE'S CHURCH
HALL**

**ORR STREET SHEPPARTON
(usual place)**

Contest Calendar September – November 2007

Sept	1	Russian RTTY WW Contest	RTTY
	1/2	All Asian DX Contest	SSB
	1/2	Region 1 Field Day	SSB
	8/9	Worked All Europe DX Contest	SSB
	15/16	Washington Salmon Run	CW/SSB/Digital
	22	Westlakes Cup	SSB/DSB/AM
	29/30	CQWW RTTY DX Contest	RTTY
Oct	6	PSK31 Rumble	Digital
	6/7	Oceania DX Contest	SSB
	9	10-10 International Day Sprint	All
	13/14	Oceania DX Contest	CW
	14	Asia-Pacific Sprint	CW
	20/21	JARTS WW RTTY	RTTY
	27/28	CQ WW DX Contest	SSB
Nov	10/11	Japan International DX Contest	SSB
	10/11	Worked All Europe DX Contest	RTTY
	24/25	CQWW DX Contest	CW

Welcome to this month's Contest Column

At the time of writing, I'm morphing from VK2BAA into a bright shiny new VK4BAA. Things are a little hectic within the BAA household, with me punching away at the laptop keyboard amidst packing boxes and removalists!

The submitted logs for the 2006 CQWW CW and SSB contests have recently been made generally available to allow operators to gauge their performance and to see if and where errors crept into their log. Only the person that submitted the log to the contest adjudicators is given access to the report file, so only the un-adjudicated log data is shown in the tables below.

Claimed Scores for 2006 CQWW CW Contest

It's great to see so many VK stations submitting a log for the CQWW CW 2006 contest. I was operating at the club station of VK6ANC, the Northern Corridor Radio Group as VK2BAA/6 during the contest and had a great time on 15 m as single band entry, with the

occasional visit to other bands when 15 m died-off. I was surprised to find that the EU 'wall' was just as awkward to penetrate from VK6 as it is from VK2. I'd thought that it would be easier to get through the melee on 40 m but on the limited number of visits to the band I still had a problem getting the multipliers into the log – even with a high beam and full

legal limit of RF available! One aspect to note for future contesting activities is that life can be made a great deal easier if the rig has a narrow CW filter – the rig I was using had no filter at all and the pile-up was hard work as a result! Another lesson learnt.

The following VK stations submitted a log for the contest:

Call sign	Operator	Claimed Score	Club Points	Comments
VK2ATZ	VK2BPL & VK2AEA	832,314	Westlakes	ABHP
VK2BAA/6	Phil	511,806	VKCC	15 m HP
VK2CZ	David	Undeclared	VKCC	10 m LP
VK2GR	Allan	169,223	Westlakes	ABLP
VK2IMM/W6	Sergey	216,810	VKCC	ABLP
VK2NU	David	436,288	VKCC	ABLP
VK2WL	Ted	Undeclared	Undeclared	ABLP
VK4AN	Eddie	405,232	VKCC	15 m HP
VK4BUI	Les	388,046	Undeclared	ABHP
VK4DX	Mike	102,030	VKCC	40 m LP
VK4EJ	Bernie	Undeclared	Undeclared	ABLP
VK4EMM	John	189,732	VKCC	80 m LP
VK4TT	Keith	6,235	Undeclared	20 m LP
VK4XY	George	327,672	Undeclared	ABLP
VK6DU	Lance	Undeclared	'WIA'	10 m LP
VK6HG	Bob	152,256	Undeclared	ABLP
VK6LW	Kevin	805,805	Undeclared	40 m HP
VK7GN	Marlin	727,509	VKCC	ABHP
VK9AA	Berni VK2IA	7,372,278	VKCC	ABHP

AB – All Band; HP – High Power; LP – Low Power

As listed on the CQWW website, not a single VK3 station appears to have submitted a log, which is a bit of a surprise. What's happening in Victoria — surely there are a few CW contesters in VK3?

Claimed Scores for 2006 CQWW SSB Contest

It's also great to see so many VK stations submitting a log for the CQWW SSB 2006 contest. I was operating at ZL6QH during the contest and had a great time on 15 m as part of a multi-multi category team effort from Quartz Hill in Wellington.

The following VK stations submitted a log:

Call sign	Operator	Claimed Score	Club Points	Comments
VK1AA	Nick	2001	Undeclared	Multi Op, as Nick's 9 year old son Josh operated too!
VK1CC	David	1,660,257	Undeclared	
VK2APG	Gerry	62,624	VKCC	
VK2ATZ	Geoff	33,075	Westlakes	
VK2BCQ	Brendon	55,550	Undeclared	
VK2BJ	Barry	47,740	VKCC	
VK2BPL	Paul	10,200	Westlakes	
VK2IMM/W6	Sergey	35,854	Undeclared	
VK2IT	Peter	20,328	VKCC	1 st contest in 40 years of ham radio!
VK2KRM	Richard	7,198	Westlakes	1 st contest. Got Advanced licence in July 2006!
VK2MIC	Stuart	7,446	Undeclared	
VK2TZA	Ivar	12,672	VKCC	
VK2WL	Ted	Undeclared	Undeclared	
VK2ZEN	Michael	10,880	Westlakes	
VK3AVV	Mike	98,304	Undeclared	
VK3FY	Chris	3,618	VKCC	Mobile
VK3KE	Jim	119,955	VKCC	
VK3TZ	Tony	181,800	VKCC	
VK4AN	Eddie	180,115	VKCC	
VK4CZ	Scott	2,021,757	VKCC	
VK4DMP	Marcello	49,192	Undeclared	
VK4EJ	Bernie	Undeclared	Undeclared	
VK4HTM	Tom	Undeclared	VKCC	
VK4IU	Peter	227,457	VKCC	
VK4LAD	Stephen	875	VKCC	
VK4NEF	Eric	61,506	VKCC	
VK4UC	John	4,702,874	VKCC	Multi Op.
VK4VCC	Laurie	30,039	VKCC	
VK4WR	Alan	2,788,539	VKCC	
VK4XES	David	6,204	Undeclared	
VK5UE	Colwyn	252	Undeclared	
VK6ANC	John	1,137,235	NCRG	Multi Op.
VK6DXI	Mirek	3,952	VKCC	
VK8AA	David	Undeclared	Undeclared	
VK8AV	Alan	4,320	VKCC	
VK9AA	Bernie	1,429,428	VKCC	
VK2IA				

The club score allocation for the CQWW contests makes for interesting reading, as VKCC and Westlakes dominate the allocations. The club score system allows a group of operators to consolidate their scores in order to compete as a whole. For VK, club members can be scattered across a large amount of geography and we have special dispensation for this aspect from the organisers of CQWW. There are quite a few 'undeclared' scores though which would've been good to include within a group score. Maybe in 2007 we'll see a few more allocated entries?

CQWW Contesting Records

The organisers of the CQWW contests produce records for each country and for the world as a whole, for both SSB and CW. The record listings tend to be slow in updates, but the latest tables available on the website are shown below.

CQWW CW Records for VK

L - Low Power; Q - QRP; A - Assisted; MS - Multi-Single; MM - Multi-Multi

Category	Call	Score	QSOs	Year record set
All	VK6AA	5,933,780	3822	03
28	VK8XX	848,990	1969	89
21	VK4EMM	886,103	2112	02
14	VK6LW	1,055,835	2236	04
7	VK6LW	810,087	1753	03
3.5	VK6DXI	103,140	487	04
1.8	VK6HD	12,330	97	85
L All	VK3DXI	1,887,782	1706	92
L 28	VK4DX	638,950	1771	00
L 21	VK4EMM	815,850	1923	00
L 14	VK4DX	761,634	1757	01
L 7	VK6LW	533,686	1453	92
L 3.5	VK6LW	83,300	346	96
L 1.8	VK3TZ	12	2	00
Q All	VK2BAA	56,810	210	05
Q 28	No entry recorded			
Q 21	VK6AA/2	378	9	01
Q 14	VK2BEX	84,739	304	91
Q 7	VK2BAA	240	10	04
Q 3.5	No entry recorded			
Q 1.8	No entry recorded			
A All	VK5GN	1,090,795	1662	98
A 28	No entry recorded			
A 21	No entry recorded			
A 14	VK1AA	921,052	1905	04
A 7	VK1AA/4	437,970	1251	03
A 3.5	No entry recorded			
A 1.8	VK6VZ	7,955	79	04
MS	VK6LW	3,404,906	2968	90
M2	No entry recorded			
MM	No entry recorded			

CQWW SSB Records for VK

L - Low Power; Q - QRP; A - Assisted; MS - Multi-Single; MM - Multi-Multi

Category	Call	Score	QSOs	Year
All	VK5GN	3,709,900	2928	99
28	VK4QK	859,011	2238	79
21	VK4VU	1,079,335	2609	79
14	VK6HD	706,251	1483	72
7	VK6IR	208,748	782	84
3.5	VK3FY	100,056	449	84
1.8	VK6HD	5,363	62	83
L All	AX4EJ (VK4EJ)	1,203,124	2061	00
L 28	VK2ARJ	479,987	1601	00
L 21	VK5AM	613,168	1578	01
L 14	VK4EMM	667,056	1533	00
L 7	VK4EMM	97,836	438	01
L 3.5	VK3TZ	105	8	99
L 1.8	No entry recorded			
Q All	VK4WPX	343,804	624	01
Q 28	VK4VHY	28,964	153	83
Q 21	VK3NDS	76,380	394	96
Q 14	VK2BAA	17,171	96	05
Q 7	No entry recorded			
Q 3.5	No entry recorded			
Q 1.8	No entry recorded			
A All	VK5GN	1,844,180	1841	97
A 28	No entry recorded			
A 21	No entry recorded			
A 14	VK1AA	535,248	1213	05
A 7	VK8DU	14,805	128	05
A 3.5	No entry recorded			
A 1.8	No entry recorded			
MS	VK4UC	4,961,152	3939	99
M2	VK4CZ	4,126,800	3309	04
MM	VK2DZZ	125,100	558	81

As can be seen from the tables, there is plenty of opportunity to set a VK record. The easiest way is to take a look at a likely VK record that is either not as yet set or based upon a low score or QSO count, then have a think about your station setup, which antennae you have available for whichever band or bands, and make plans for later this year. If you fancy a challenge (and, let's face it, contesters don't!) select an established record and aim to break it!

Some records have stood for quite some time, such as the SSB Multi-Multi record set by VK2DZZ in 1981 – I was just leaving high school at this time! Another record set quite some years ago was the high power 20 m entry by VK6HD in 1972. Even with the sunspot cycle being as it is currently, 1500 QSOs on 20 m should still be possible for a serious entry from VK? Go on, have a crack at a record!

CQ WPX RTTY Results

The results for the CQ WPX RTTY contest recorded the following VK and ZL stations participating:

SOAB HP ZL2AMI 1,148,660
SOAB HP ZL4BR 669,300

SOAB HP VK4AN 571,650
SOAB HP VK2NU 3,724
SOAB LP VK3KE 106,455
SOAB 40M ZL3TE 11,704
Well done all!

Harry Angel Sprint Results

The results of the Harry Angel Sprint contest are published elsewhere in this edition of AR. The Westlakes Club are no doubt proud to be demonstrating their contesting prowess, with VK2AEA winning the CW section and VK2BPL winning the Mixed section, both by a handsome margin. Well done gentlemen!

The son of Eddie de Young VK4AN, Raj VK4FRAJ, has been busy on the contesting scene. Raj has entered the Jack Files Contest and continues to move proud dad Eddie away from the rig for the IOTA contest just last month in the QRP 12 hour section, claiming a score of 14,040 using SSB and CW. Raj reports trouble with DX stations getting to grips with the four letter suffix, but managed to sustain the battle for 10 hours. We'll no doubt hear more from this young man in the future as Raj is 12 years of age – not that you'd know that by his operating prowess on the air. Well done Raj, and well done Eddie for being a good sport and giving Raj a fair go in your station. But be careful Eddie – you might need to alter the station to allow a multiple transmitter approach, else you won't get on the air yourself anymore as Raj will be at the controls!

If you have any contest related material for inclusion within the column, topics that you'd like covered or even some experiences and pictures you'd like to share, then please feel free to get in touch via vk2baa@wia.org.au. See you on the bands.

73 de VK2BAA Phil Smeaton

A note from Ian Godsll

Greetings to all Readers

I have asked permission for this to be included in the Contest Column because I am very conscious of being late with the results of two contests this year and I want to offer you all my sincere apologies for these delays. It was just unfortunate that my wife and I had to move QTH at the end of April, just at the time that the QRP Hours Contest and the Harry Angel Sprint were due.

"In the process I lost access to my broadband connection ("technical difficulties" said the ISP) and had to resort to less reliable means of getting your logs. I had hoped that after two or three months I would have been back to something like normality, but sadly things have not worked out that way.

However, I believe that the results attached are accurate and I thank everyone for their patience, as well as the efforts that you made in taking part and submitting your logs.

Following on from this state of affairs, I would like to advise that the QRP Club's annual QRP Day Contest has been moved to Saturday 8th September. The Rules will appear in this Column soon.

So my apologies to you all for my being so tardy this year, but I hope to join you again soon for the wonderful world of AR contesting.

73, Ian Godsll VK3JS

COQC QRP Day Contest Rules 2007

0800 -1200 UTC Saturday 8th September 2007

Sponsored by the CW Operators' QRP Club in Australia and open to all AR operators, the objects are:

1. To work as many stations as possible in each hour,
2. To encourage contacts between VK, ZL and P29 stations,
3. To encourage the use and enjoyment of low power equipment, whether commercial or home-brewed,
4. To test the efficiency of your station under QRP conditions,
5. To compete for a certificate for best hour and/or best three hours,
6. (In VK) to prepare for the Remembrance Day Contest.

Entrants are encouraged to compete for all four hours, but to submit their logs on the basis of "best three hours". Logs will also be considered for highest score in any individual hour.

BANDS: All HF bands (no WARC) may be used, although it is envisaged that the bulk of operations will be on 80 and 40 metres.

CATEGORY: Single Operator only.

MODES: CW/PSK31, Phone, Mixed.

EXCHANGE: A three-digit serial number beginning at 001 and incrementing by one for each contact.

REPEAT CONTACTS: In order to make greater use of available band space and time, repeat contacts with the same station will be allowed once each hour of the contest on each mode (i.e. a station may be worked each hour on CW and Phone).

Please note: RS(T) no longer required, but if given should be an accurate statement of signal strength.

SCORING:

Stations within VK/ZL/P29 score as follows:

VK-VK	1 point	ZL-ZL	1 point	P29-P29	1 point
VK-ZL	3 points	ZL-VK	3 points	P29-ZL	3 points
VK-P29	3 points	ZL-P29	3 points	P29-VK	3 points

Any DX stations (outside VK/ZL/P29) score 5 points.

A BONUS of 20 POINTS may be claimed if the QRP station operated with a homebrew transmitter or transceiver.

FINAL SCORE is the sum of the total QSO points, plus any bonus points. Except for the use of homebrew equipment (see above), no multipliers apply.

LOGS: PLEASE USE SEPARATE LOGS FOR CW/PSK31, PHONE or MIXED MODES. Logs must show full details of time UTC, station worked, band, mode, exchange and points claimed. Arrange logs so that each hour is clearly distinguishable. Logs should be submitted for "best three hours" and scores will be considered for highest score for each separate hour. Please indicate clearly if you claim the 20 points bonus for homebrew equipment (once only for the Contest).

CERTIFICATES: Certificates will be awarded to the following:

- (i) first three placegetters in each mode who submit "best three hours" entries,

- (ii) the highest scorer in each hour in each mode in each call area.

GENERAL:

- (i) A SUMMARY SHEET, showing operator's callsign, name, address and points claimed should accompany the Log.

- (ii) Any station claiming to operate QRP MUST NOT exceed a maximum of five watts carrier to the antenna and should add /QRP after its callsign.

SEND Logs and Summary Sheet by mail to --

Ian Godsil, 121 Railway Parade, Seaford, 3198.

Logs may also be sent via email to Ian_G@mail2ian.com

All entries to be received no later than Friday 21 September 2007.

Results Harry Angel Sprint 2007

CW		
1	VK2AEA	60 points
2	VK3GDM	14

SSB

1	VK5YX	63 points
2	VK7VH	57
3	VK2LCD	54
=4	VK4VCH	51
=4	VK3SSB	51
8	VK4PTO	47
7	VK4HTM	43
8	VK3AAK	42
9	VK2KDP	37
=10	VK3FJAC	36
=10	VK4YZ	36
12	VK3ZPF	33
13	VK4JRO	25
=14	VK3PRA	22
=14	VK2HBO	22
=16	VK4JUS	21
=16	VK2FRKO	21
=16	VK3FCLL	21
19	VK4DGG	20
20	VK4JM	18
21	VK4UD	17
22	VK7BEN	16
=23	VK4HAG	14
=23	VK2VKV	14
=23	VK3KE	14
=26	VK4JJ	13
=26	VK4BRT	13

MIXED

1	VK2BPL	62
2	VK8AV	11

Results QRP Hours Contest 2007

CW		
1	VK2AVQ	10 points
=2	VK3GDM	8
	VK3RD	8
	VK3JY	8
5	VK4CEU	6

(Note: As Manager, I did not include my own score)

SSB

1	VK2LCD	28 points
2	VK7VH	27
=3	VK4HTM	25
=3	VK2BPL	25
5	VK3AAK	18
=6	VK5DG	13
=6	VK2ASU	13
=8	VK4FHYH	10
=8	VK4FNQ	10
10	VK3JY	9
11	VK2AVQ	5
12	VK7XGW	4

MIXED

1	VK4TGL	8 points
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2007 160 metre VK/trans-Tasman Contest

Complete Phone Results

"Participation factor"

PHONE:

39 ZLs and 96 VKs participated. $39/96 = 0.406$.

All ZL points for VK contacts, (not including "prefix group" bonus points) were reduced by multiplying by 0.406.

CW:

No entries

Category 6 (Phone)

	Call sign	Score	Contacts
1st.	ZL1FF	1435	170
2nd.	VK3FRC (multi-op)	1372	177
Eq 3rd.	VK2ATZ (multi-op)	1339	197
Eq 3rd.	VK3HJ	1304	180
4th.	VK4WIL (multi-op)	1289	164
5th.	VK2MA (multi-op)	1256	174
6th.	VK2AWX (multi-op)	1239	170
7th.	VK2TZA	1194	168
8th.	ZL4RMF	1132	146
9th.	ZL4A (multi-op)	1064	137
10th.	VK3TZ	1004	148
	ZL3UR	943	126
12th.	VK2BV (multi-op)	854	131
	VK3JWZ (ineligible)	795	114
13th.	ZL3AKM	742	97
14th.	VK3AMW	653	94
15th.	VK2ENG/Q	465	68
16th.	VK2YW	392	95
	ZL2MS (ineligible log)	384	
17th.	VK4FNQ	359	55
18th.	VK5BC	330	75
19th.	VK4CAG	325	73
20th.	VK2ZCM	307	64
21st.	VK5AW	290	62
22nd.	VK3ANP	171	43
23rd.	VK7ARN	135	30
24th.	VK3WWW	123	24
25th.	VK2GR	117	21
26th.	VK1KLW	99	42
27th.	VK2TMG	83	13
28th.	VK2ZSO/Q	58	12
29th.	VK3TF	20	10

Category 7 (QRP Phone)

	Call sign	Score	Contacts
1st.	VK2ENG	465	68
2nd.	VK2ZSO	58	12

Note: VK3JWZ (Contest Manager) Cat 1 Phone score of 218 is ineligible.

2007 160 metres VK/trans-Tasman Phone Contest

The propagation conditions were perfect on 160 m. There was no QRN at any stage, and the ZL signals were loud for the entire Contest. There was no customary rise in the first hour, or decline at the finish. Maybe this is why the last hour produced the most contacts for many when, usually, some would be tucked up in bed.

Unfortunately, ZL participation was down, and in the most populous zone, there was only one ZL1. Maybe a clash with the "ZL Memorial Contest" on 80 m was the reason. Trevor Buckeridge ZL1FF did not let that deter him, by winning the Contest and collecting the Trophy and certificates for 1st 160 m Phone, and the Night Owl's "Bucket Mouth Award". You might recall that Trevor, a relative newcomer to ham radio and contesting, also won the 80 m Phone Contest, - so that will be twice that the Contest Manager has had to spend \$28 on postage. No light-weight Trophies in the VK/trans-Tasman!

The team from Frankston and Mornington Peninsula ARC (VK3FRC multi-op), were equal 2nd with Luk Steele VK3HJ.

Only 30 points separated VK4WIL, VK2MA, VK2ATZ and VK2AWX (all multi-operator Club stations), in 3rd, 4th, 5th and 6th positions respectively. Mike Dower VK2ENG won the certificate for 1st 160 m QRP Phone.

This was 160 m at its best. Even Contest Manager VK3JWZ, with a pretty ordinary antenna, was receiving replies from ZLs that he could hardly hear! - All good stuff!

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**The 18th North
Queensland**

**Amateur Radio
Convention**

**September 21st,
22nd & 23rd 2007**

**JAMES COOK
UNIVERSITY
DOUGLAS CAMPUS**

DX - News & Views

John Bazley VK4OQ,
P.O. Box 7665, Toowoomba Mail Centre, QLD 4352
john.bazley@bigpond.com

2008 already has started to look interesting!

February 2008 will see another operation from VP6D - initial details below. In March 2008, an operation is being planned from Clipperton. So with conditions hopefully improving and still four months to go to 2008, there is still plenty of time for some more announcements to be made!

Ducie Island

The VP6DX team, heading to Ducie Island, has been busy behind the scenes preparing for the much anticipated February 2008 DXpedition, reports Carsten Esch DL6LAU. The group has decided "to extend the duration of the expedition". As a result the budget will increase for this operation. Plans are to depart Mangareva Island, Gambier Islands, French Polynesia via the Braveheart (www.braveheart.pn), on 5 February 2008 and head for Pitcairn Island, which normally takes about 36 hours.

The team will spend a few hours there before taking another 36 hour boat trip still aboard the Braveheart, to Ducie Island. They are planning to arrive at sunrise on February 9th. The only landing area is located on the northeast side of the island and can be tricky. They hope to be up and running within 24 hours.

The team needs to be back on Mangareva by March 3rd, so they would need to allow about six days in order to get back in time. Looks as if, if all including the weather goes well, they will have VP6 QRV for as long as 19 days. There is a slight chance of a short visit to another uninhabited island (editor's note: Henderson Island is the only one on the way to and from Ducie Island) if things on Ducie slow down.

Since the Dayton announcement of the trip, the operators list has been adjusted. Unfortunately Krassy Petkov K1LZ, will not be able to go. The current list of operators is DJ8NK, DL3DXX, DL6LAU, DL8LAS, K3NA, OH2BH, OH2PM, SP3DOI, UA3AB and WA6CRR. The group plans to announce the addition of three more ops

in the near future.

A support team will assist the VP6DX DXpedition team. Kan Mizoguchi JA1BK, who was the DXpedition leader on the first operation (VP6DI) from Ducie and who supported the second operation (VP6DIA), will be advising the VP6DX team. DF6QV, DJ2YA and OH1JT will be the Antenna Engineering Team. The team's Webmaster will be DL1MGB. Bob Beebe GU4YOX is the electrical team manager and Miralda Warren VP6MW is the Pitcairn Island liaison. More support personnel are expected to be announced soon.

Early on the team chose to take radios that would possibly be "the best radio for this kind of operation". The team will have seven of the new K3 transceivers thanks to the sponsorship of Elecraft (www.elecraft.com). Another sponsor for this operation will be ACOM (www.hfpower.com), as the team will have six or seven of the ACOM 1000/1010 amps and one ACOM 2000A (for 160 metres).

Serious efforts are being made in all aspects of this DXpedition, including antennas, to give everyone a chance of working Ducie Island.

They will have two phased verticals on 160 metres aimed at Europe and the US and one vertical will be used to all other areas. Plans are to have two 4 squares on 80 metres, one on CW and the other on SSB, for simultaneous operation. Four Squares will also be used on the 30 and 40 metre bands. On 10 through 20 metres, they will be using phased vertical dipoles.

As you can see, from the list of operators, their time on the island, the equipment and antennas, this will be a serious effort to make Ducie Island available to the DX community. Donations for this operation are being requested, in order to make this operation a success. Your support before the operation is requested, as all of the expenses have to be paid way before the team actually depart. The team members have already put upfront the money.

Donations have already been received or promised by the following sponsors: German DX Foundation (GDXF), Danish DX Group (DDXG), Clipperton DX Club (CDXC), Chiltern DX Club (CDXC), European DX Foundation (EUDXF), UK Six Metre Group (UKSMG) and the Central Virginia DX Contest Club (CVCC). Individual contributions have been received so far from: K9CT, W2RI, DJ0QN, G4DYO, K7HC, N6OX, DK5WL, DL2OE, K7EIE, DL3JJ, JF7RJM and DL7ZZ.

The budget for this operation is over \$200,000 (USD). Those willing and able can support this operation, with details on the team's Web site at <http://ducie2008.dl1mgb.com/content/view/33/54/>. Over the next few weeks the VP6DX team will be preparing the shipping container, which will contain the radios, amplifiers, antennas, generators, etc.

The VP6DX Website (www.vp6dx.com) is constantly being updated and a monthly news letter will be available with all the details prior to the trip. Those wishing to automatically receive the newsletter can go to the Web site and "leave your e-mail address in the News section".

UA4WHX: Third DXpedition comes to a close

Vladimir Bykov UA4WHX has confirmed that he is heading back home after being in Africa and the Middle East for over two years. He went through two radios, lost a finger and travelled to 21 countries making over 310,000 QSO's. During that time he made many DXers happy with all time new ones and filling in band gaps.

So after so many QSOs, here are the instructions for QSLing. Vladimir will accept bureau QSLs, including those directly from QSL bureau or Societies to his home address. Direct requests may also be sent to:

Vladimir M. Bykov
P.O. Box 2040
Izhevsk 426000
RUSSIA

No QSLs should be sent to his US call

(AC4LN). He insists on IRCs and not cash in envelopes, no matter how much. Vladimir believes the Post Office is safe but does not want to tempt anyone. He can mail seven QSL cards for one IRC, so you can do the maths as to how many should be sent.

This was Vladimir's longest trip. The ARRL DXCC desk has approved all of the previous trips

More DX

ZD7 Tom KC0W will be active from St. Helena Island mid September 2007 with the callsign of ZD7X. This is NOT a DXpedition, as Tom plans to be on the island for a number of years. Modes of operation will be CW, SSB, RTTY & PSK. ZD7X will be making a special effort on the 30, 40 75/80 & 160 metres bands.

VK9 Lord Howe Island Haru Uchida JA1XGI/W8XGI will be on the air October 19-22, just 3½ days, from Lord Howe Island, with the callsign VK9GLX. Haru will be on 40, 30 and 20 m. He has asked for permission for lower bands. His modes will be CW, SSB, RTTY and SSTV. QSL via JA1XGI, bureau or direct, or W8XGI direct only.

P29 G4EDG and CTIAGF will be joining **SM6CVX** and **G3KHZ** for their IOTA trip to Papua New Guinea September 23-October 5. They will sign **P29VCX** from Nukumanu Island, OC-284, September 23-29 and **P29NI** from Takuu Island, OC-283, September 30-October 5. They may then go to the Tulun Islands, OC-256, October 6-9, callsign not determined yet. Look for them all bands, including 160 and 80, with three stations, two amps, verticals and a multi-band dipole. QSL **P29VCX** via **SM6CVX** and **P29NI** via **G3KHZ**.

SV8 SV8/OK1MBZ and SV8/OK1MKI will be on Skopelos, EU-072, September 10th to September 20th, 80-10 m CW.

Happy DXing.

Special thanks to the authors of *The Daily DX* (W3UR) - 425 Dx News (11QJ) for information appearing in this month's *DX News & Views*.

For interested readers you can obtain from W3UR a free two week trial of *The Daily DX* from www.dailydx.com/order.htm

Spotlight on SWLing

Robin L. Harwood VK7RH

Things are looking up!

Well Spring has arrived and slowly the propagation is improving. I have been informed that the recovery time for this Sunspot period is likely to be longer than in previous years.

I also think that this has been masked by the dramatic reduction in HF traffic. I have also noticed conditions on the twenty metre ham band and 15 metres are also extremely poor.

I am also pleased that my Icom IC-R70 roared back into life after being dead for several months. This happened after I frustratedly tapped the top of the set and was pleasantly surprised to see the digital display and audio return to life. Whenever the set dies, I gently tap it and presto. It must be a dry joint somewhere.

The American IBB, which operates the VOA and other stations such as Radio Free Asia, Radio Free Europe, Radio Sawa (Arabic) and Radio Farda (Persian), announced at the end of July they are going to shut down the Delano transmitters in California, after 63 years of service. This will happen at the end of the current broadcasting period at the end of October. All senders will be decommissioned by the end of January. This will leave Greenville in North Carolina as the only remaining HF site in the continental USA. A medium

wave facility also remains at Marathon Florida, for Radio Marti programming for Cuba.

The American Congress recently passed legislation to commence programming in Spanish for Venezuela. I have had no word on when this will commence. Cuba has been relaying Venezuelan programming for some time and Cuban programming has been relayed on some domestic Venezuelan stations sympathetic to President Chavez. Many private and commercial stations and networks have been hostile to the government and in retaliation, the government has been cancelling their licences and seizing their senders.

Kol Israel has continued relaying domestic English programming over shortwave but all external programming except Persian has been axed. Israel goes off daylight saving around September 15th, so the English programming will now be at 0430. I do not have their current frequency schedule but they usually are between 11500 and 11600 kHz.

Well that is all for this month. Don't forget you can email me at vk7rh@wia.org.au

Or snail mail to 20/177 Penquite Road, Norwood TAS 7250.

73 de Robin L. Harwood VK7RH.

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Westlakes Cup

Saturday 22nd
September 2007

(Rules in Amateur Radio
August)

Plan Ahead

The Mid North Coast
Radio Expo 2008

When: Sunday Jan 20th

Where: St Johns Church Hall,
Mc Lean Street, Coffs Harbour

Time: 8.30am start

Trade Displays, disposals, club
displays, home brew and more

Info at www.mncarg.org or call
Gary VK2ZKT on 02 66552990

New Linear Transponder to fly to ISS in December

In a recent press release from the European Space Agency it was reported that plans are underway to resume testing and integration work on the ESA Columbus Space Laboratory to prepare it for connection with the International Space Station.

This is great news for the L/S fraternity because Columbus will carry amateur radio equipment to support a linear transponder with an L-band uplink and S-band downlink. The Columbus lab was flown to Florida back in May 2006, to get in line for its launch to the station. Earlier this year, it was removed from temporary storage, and engineers equipped it with experiment racks and orbital hardware. If all goes well, it will blast into space atop the space shuttle Atlantis as early as 6th December 2007 on the STS-122 Shuttle Flight.

Information on the Columbus Space Laboratory can be found at http://www.esa.int/esaCP/SEMJV2HYX3F_index_0.html. There is no indication of how soon after successful deployment the amateur radio package will be activated. Hopefully it would be slated for early 2008.

GippsTech2007 Conference a resounding success

I feel sure this will be reported in other sections of AR magazine but as a self confessed weak signal junkie I just have to say something.

Amateur radio satellite operation is an area intrinsically bound to weak signals. Tiny fractions of a watt, sometimes tens of thousands of kilometres away. Digital telemetry signals often buried in the noise level. Pushing the performance of your station: that is what satellite operation means to me. Detecting weak signals is the name of the game.

If you are excited by these aspects of our hobby, GippsTech is for you too. Family matters had prevented me from attending earlier conferences but this time I joined friends Peter VK3SO

and Carlo VK3BCL on a fantastic weekend of learning and information exchange. Our very busy magazine editor Peter VK3KAI and his team again put together a program that grabbed and held the attention of all participants. The presenters covering the move into the microwave region, advanced digital detection techniques and anomalous ionospheric propagation all hit the spot for me. In fact I found that every topic presented had application to my main areas of interest.

As I said in opening, GippsTech2007, a resounding success, thanks to Peter and his team.

AO-7 coming out of eclipse period

It looks like AO-7's long orbital winter is about to end – at least for a while and perhaps well into 2008. John LA2QAA has made a study of the AO-7 eclipse charts for the last 3 years and has concluded that there is a progression toward non-eclipse orbits in late 2007 - 2008.

Each time AO-7 "powers-up" after coming out of eclipse, the operating mode can be set randomly lending a high degree of uncertainty to operations through this old bird during eclipse periods. If the eclipse periods are going to become less frequent, that translates into better predictability and therefore more activity can be expected.

Again, operators are asked to observe the recommendations for working AO-7. Please decrease your power as the satellite nears the time of closest approach to avoid overloading it. Any such overload is easily detected as it produces FM-ing of the downlink signal. This assumes that the operator is hearing the downlink signal of course and not just calling indiscriminately. Sadly this happens.

Don't be fooled by propagation anomalies either. The mode-B transponder is working well and will continue to do so providing the alligators come and play somewhere else. Under normal circumstances you do not need a lot of power. Please use only as much as is necessary to maintain adequate communications. If you cannot hear

any signals or if you can but they are very weak then you should improve your receiving capabilities rather than increasing your uplink power. Since its unexpected return to service, AO-7 is very much a QRP satellite. Please treat it as such.

Past mode changes can be viewed at: <http://www.planetemily.com/ao7/stats2.php>, predicted eclipse chart can be viewed at: <http://www.planetemily.com/ao7/Eclipse.php>

Beacon chasers alert

RS-15 was launched in December 1994 and it fell virtually silent some years ago. Henk PA3GUO reported recently that RS-15's beacon had been heard in Europe. *As it had been over 10 years that I had heard this satellite I decided to give it a go. Using the TS-2000 and a simple 14 MHz dipole with no pre-amp, I was able to hear the beacon. Quite weak, but audible. Frequency 29.3156 MHz.*

If you want to know what it sounds like (and looks like!) Henk's web site is: <http://www.qsl.net/pa3guo> You will hear and see the beacon being switched on (~2 seconds) and off (~3 seconds). Also you will hear and see the beacon 'tuning in' to the correct frequency every time it's switched on. Keps are still available for this aging satellite, so download a set and have a listen.

Even though Henk was successful using a 20 m antenna I would suggest using a 10 m dipole or Yagi. RS-22 is another old timer to return recently. Keep listening around the old beacon frequencies. They are listed on the AMSAT-NA web site. Who knows, you may be first to report another 'old faithful' to come back to life.

Request for TLM data

Can you help Kevin VK3UKF? I would like to request copies of any telemetry recordings of Sputnik 12/13. I know it was killed by radiation while flying over the South Atlantic Anomaly during a Solar storm. I am seeking any telemetry recordings of this spacecraft's CW signal on HF 29 MHz. When the spacecraft was alive, I wrote a telemetry decoder for Russian Sputniks. I only managed to make 2 small datasets using the CWget

and my RSdashboard before it went and got itself cooked. This is a request for historical reasons, the data and software I want to put online at QSL.net. Thanks all, Kevin, VK3UKF.

Progress reports on new satellites

Following the 2007 AMSAT-UK Space Colloquium, the following news is to hand.

- Amateur Radio satellite Delfi-C3 video available on: http://www.southgatearc.org/news/july2007/delfi_c3_video.htm
- AMSAT-OZ Satellite on a PCB - AMSAT-UK Colloquium Paper and PowerPoints at: <http://wiki.amsat.dk/>
- P3E Update: http://www.southgatearc.org/news/july2007/p3e_update.htm
- The UK to get its first Cubesat?: http://www.southgatearc.org/news/july2007/uk_cubesat.htm

The AMSAT group in Australia

The National Co-ordinator of AMSAT-VK is Graham Ratcliff VK5AGR. Contact Graham if you wish to be placed on a mailing list for breaking news and net reminders. As a forum for members AMSAT-VK operates two monthly nets.

AMSAT-Australia Echolink Net

The "Echolink" net meets on the second Sunday of each month. Anyone with an interest in Amateur Radio Satellites is welcome to join the net. Graham VK5AGR acts as net controller. The net starts at 0500 UTC during summer time periods and 0600 UTC during winter standard time periods. Connect to the AMSAT conference server on Echolink a few minutes before these times.

AMSAT-Australia HF net

The HF net meets informally on the second Sunday of each month. In winter (end of March until the end of October) the net meets on 3.685 MHz at 1000 UTC. In summer (end of October until end of March) the net meets on 7.068 MHz at 0900 UTC. Start listening 15 minutes before these times. All communication regarding AMSAT-Australia matters can be addressed to: AMSAT-VK, 9 Homer Rd, Clarence Park SA 5034. Graham's e-mail address is: vk5agr@amsat.org

Did you hear our Sunday morning broadcast session?

If you were not listening to the Sunday morning broadcast on 5th August, you missed an interesting session. The voices you heard reading the news were from ALARA.

Graham VK4BB contacted our President, Marilyn VK3DMS, earlier this year and asked if we would be prepared to 'do' the broadcast one weekend, and so it came to be.

For those who had to speak it was an interesting experience. Susan VK7LUV had to wait till the children were in bed. Others had to remake the recording a couple of times before they got it right, but everyone reported that it sounded OK on the day!!

Birthday luncheons and others

Last month, the Birthday Luncheon Pam VK4PTO was planning for the Gold Coast was mentioned. That was held on 14th July at the GCARSI club rooms and was a great success. There were 40 at the lunch.

Of the 17 YLs present, 15 were already members of ALARA before the lunch and the other two probably were members by the end of it! Everyone had a good time.

In VK5, the Birthday Luncheon was held on Sunday 29th July at the Marion

Hotel. There were 19 at the luncheon and two children. Dianne VK5FGHI and her baby (a future YL) are not yet members of ALARA but all the other 12 YLs are. Myrna VK5YW, Joy VK5YJ, Jean VK5TSX (State Rep), Tina VK5TMC, Christine VK5CTY, Maria VK5BMT, Jeanne VK5OQ, Jenny VK5FJAY, Sue VK5AYL, Meg VK5YG, Melanie VK5FMEL, and Dianne, were at one table, and six OMs were at another. Everyone shared some of the chocolates brought back from overseas with their coffee.

At the VK6 luncheons, including the one on July 18th, to celebrate our birthday, there are usually only Poppy VK6YF, Helene VK6HI, Kathi VK6KTS if not working, Maree XYL of Jim VK6JP, Pam XYL of VK6LC, Cliff VK6LZ and Christine VK6ZLZ if not working, and David VK6WT. As you can see, they need some more attendees.

If you are a VK6 YL with a new licence, or an XYL who would like to accompany your OM to the Bayswater hotel on the last Wednesday of the month, you would be very welcome. Alternatively, contact Christine VK6ZLZ, for more information.

In VK3, a group of new licensees have begun meeting for lunch on a semi-regular basis. These YLs all live close to each other, so they meet at a local coffee shop.

In the photo there are only four YLs but there is room for more. Please



The VK3 lunch group.

contact Michelle VK3FEAT, for more information.

It is great to know that we are able to get together for a face-to-face meeting every now and then.

Now that you have participated – what next?

Now you must put in your logs. You wrote up a log of your contacts in the R.D. Contest and in the ALARA Contest you must send those logs to the Contest Managers so they can be collated with all the other logs.

By entering the R.D. Contest your log adds to the total for your State, to help it win. In the ALARA Contest your score

is just for you. Included in the rules for each Contest is the name and the address of the Contest manager, and the closing date for the logs.

All the logs will be listed for both Contests, so you could have the pleasure of seeing your name at the top, or near the top, in both lists. In the R.D. there is the added pleasure in knowing that you have boosted the state score as well.

In the ALARA Contest, certificates are awarded for the top score in each state and in several other sections, with a plaque for the overall top score.

From your contacts in the ALARA Contest you can also apply for the ALARA Award, as mentioned last month. There are new rules as well as the new certificate which was printed

inside the back cover of "Amateur Radio". The information includes the address of the Awards Custodian and the cost of the certificate.

Change of date

The YL International Meet in South Africa next year has now been moved to the 3rd to the 18th October.

This means that there is no longer a clash with the date of the ALARAMEET in Ulverstone next year!! Great news as this means it is possible to attend both Meets.

Watch in the Newsletter and in this column for more information.

ALARA Award 2007 RULES

Aim: The aim is to score 10 points to qualify for the Award. This Award is available to YLs, OMs, and SWLs contacting ALARA members on or after 1st July 2006. (Anyone who holds an original Award may apply for the new Award)

Scoring VK/ZL: 10 contacts, including 4 Australian call areas.

DX: 5 contacts, including 3 Australian call areas. (One point per contact for local contacts, two points for DX contacts)

Conditions: All contacts must be made from the same call area. Special endorsements available for Mixed, CW, Phone, All 28 MHz etc.

Exclusions: Repeater contacts and official ALARA net contacts do not qualify.

Medallions: Endorsement medallions are available for each 10 points scored

using the same formula as above.

General Conditions: Applicants must submit a log extract signed and declared to be a true record of contacts made. Full name, address, signature and call sign of applicant are required. It is preferred that the log be submitted in an electronic format, such as plain text in Excel, Word etc. Headings must include Date, Time (UTC), Band, Mode, call sign and name of the ALARA member contacted. A copy of the preferred format is available from Kathy VK3XBA (email or phone).

Addresses: Full name, address, signature and call sign of applicant are required.

The Award: The initial Award is the award proper and a contact page which lists the contacts that were used to satisfy the conditions of the award.

Costs: Fee (to accompany each application) for the Award is \$5 Australian

(or equivalent) or 4 IRCs.

The medallions are free if included in the initial application. Medallions applied for at a later date are available in two formats.

1. A sticker that may be placed on either the award or the contact page, or an addition. The cost of the medallion sticker is \$1 per delivery (paid in Australian postage stamps)

2. For the contact page the cost is \$1.50 and includes a medallion printed on the contact page. The page will be one third portrait size and will be sent in a suitable envelope \$1 Aust. per application.

Send to

Kathy Gluyas VK3XBA
4 William St.
Donvale Victoria 3111 Australia
Phone: (03) 9872 3411
Email: kathyg@spacelink.com.au

ar

SUNFEST 2007

The Sunshine Coast Amateur Radio Club
0900 hrs Saturday 8 September 2007

(Sellers from 0700 hrs)

Woombye School of Arts

Blackall Street, Woombye (UBD Map 66 F12)

Reservations for table space—Contact: Richard VK4YRP
(07) 5492 9898. Email: randwphilp@bigpond.com

Hamfests

SADARC Shepparton
Sunday 9 September
plus10@optusnet.com.au

GCARC Gold Coast
Saturday 6 October
catchcryhamm@yahoo.com

BARG Ballarat
Sunday 4 November
vk3axh@barg.org.au

The Misconceived Link

Paul van der Weegen VK2EX
vk2ex@optusnet.com.au

We all know how our hobby is changing and I am thrilled to be part of it. The introduction of the Foundation Licence is now boosting our hobby into the future. Likewise, I am sure the future will be full of new technologies we haven't even thought of yet. VOIP technology is part of this.

We cannot ignore the impact that the internet has had on all of us. All one needs now is a computer and an internet connection to talk with others all over the world and no licence is required. But we are radio amateurs, and most of us studied hard to get an amateur radio licence, which puts us in a unique position, because we are also licensed experimenters.

The ACMA has given us the tools to advance beyond what we already have and I believe more changes may be on the way in our licence determinations. We need to accept and encourage those few that take the steps to bring these changes forward.

The Misconceived Link is the link we now have to the internet. IRLP and EchoLink are now part of our lives and there are so many misconceptions out there about them. In the past 18 months, I have been involved with these modes of communication, in particular EchoLink, so most of my comments will be from the EchoLink view.

Firstly, a bit about myself. First licensed in 1977 as a novice with a love of HF communications, I have all the usual: triband beam, verticals and dipoles. I love to rag chew, particularly with DX stations, and am not much into contesting or short contacts, except for rare contacts, of course. The most important thing to me is my family, and with three teenagers there was no room for my HF shack, at least at the moment (the kids each wanted a room to themselves). This is why EchoLink has taken such a big part in my daily operations (necessity breeds innovation).

I have heard all sorts of misinformed comments about VOIP (Voice Over Internet Protocol) like "that's not real radio", "you only talk with other computers", "we don't want pictures being sent over the repeater", "keep the system clean", "unlicensed people can access the system", "why not just use a computer to talk to them" and so on.

I can partly agree with some of these comments but let's get it clear about what we are using. EchoLink is meant to hook up to a radio, and I don't fully agree with the use of it from the computer terminal. I use EchoLink every day on my drive to and from work via a simplex node hooked up in my garage and most of my contacts are with other mobile stations doing the same thing or through their local repeater in other countries. What's not "radio" about that? The internet is just a bridge connecting the two radios together, that is it, nothing else, two hams talking over local radio like always, except they are in different countries or maybe hundreds of kilometres apart. That's innovative if nothing else.

Just listen to some of our local repeaters, totally quiet for hours on end, nobody new to talk to, a great resource sitting idle. Introduce EchoLink or IRLP and listen in then. I have just had the pleasure of setting up an EchoLink node to the VK4RBT repeater on the Gold Coast. There was some opposition to doing this at first, so I donated the use of my fully functional simplex link for three months to see how it went and how the local users felt. The task was simple, as I just changed the frequency that my link was on to the repeater frequency and it acted like a local user transmitting on the repeater input and receiving on the repeater output. After one week's operation I printed an activity report from the EchoLink log and ended up with four pages of contacts and activations of the node by local and remote stations.

At the time of writing this article, I checked into the system and noted the types of connections logged into the server. 2712 RF systems active, that is EchoLink computers hooked up to a transceiver and accessed by RF, this is made up of 1453 simplex nodes like the one in my garage and 1259 repeaters. Computer users world wide amounted to only 587, so you see that radio to radio communication is more prominent than

computers users by a large percentage. A large majority of the simplex and repeater systems will not allow a computer user to link to their systems. This is one of the fundamental differences between IRLP and EchoLink; IRLP will not allow a computer connection at all, where with EchoLink the choice is at the discretion of the Sysop.

Personally I have found the hams coming from the computer interface to be very competent operators and mindful of correct operating procedures. I have also found that some hams just can't get on air for many reasons and the computer hook-up has made it possible for them. This has community service possibilities, for the disabled in particular.

Before getting on air with either EchoLink or IRLP you have to prove that you are a current licensed amateur. With IRLP you require dedicated equipment (hardware) and knowledge of the Linux operating system. With EchoLink, and some knowledge of the Windows operating system, you can home brew your equipment easily, or buy ready-made plug and play interfaces. I built my first interface in the garage in one hour and had a system running with full DTMF control shortly after. It's not hard.

Since setting up VK4RBT repeater with EchoLink, I have been approached by a number of local amateurs asking how to set up their own links. Most of them did not realise that it could be used this way. It is exciting that many new Foundation Licence holders are interested and excited about the possibilities.

So come on you hams, get out there among this internet and VOIP technology and see how we can exploit it to our advantage. There is so much more to come, only limited by our imagination, and we can invent even more. And if you hear someone calling out on an IRLP or EchoLink enabled system, please answer them and welcome them to your local radio area. No one likes calling CQ and not getting an answer.

VHF/UHF – an expanding world

David Smith VK3HZ – vk3hz@wia.org.au

Weak Signal

David Smith - VK3HZ

There has been a minor surge in activity on the 23 cm band recently. One of the reasons for this seems to be the local availability of relatively cheap 60 W power amplifiers.

Most people on 23 cm run either a commercial 23 cm-capable rig (IC-910H, TS-2000X, IC-1275 etc.) or use a transverter from an HF rig. In nearly all cases, these setups will use one of the Mitsubishi power modules in the output, providing 10 to 15 watts of power. A few stations have amplifiers to produce higher power, but these are either home-built, or purchased from overseas at substantial cost. So, the majority stick with the standard 10 W or so.

The 60 W power amplifiers are commercial units converted from 1800 MHz and require 10 W of drive. This means they are ideal for connecting to the typical 23 cm setup. And while 60 W doesn't sound like a huge increase in power, it makes a substantial difference on marginal paths, particularly if both ends are running the higher power. Of course, a masthead preamp is almost mandatory on 23 cm to overcome feedline losses, which rise to significant levels for all but the thickest feedlines.

Mike VK3AAK, on the Mornington Peninsula, is running one of these PAs and reports the following:

Ian VK1BG and I are working hard at a contact between Canberra and the Mornington Peninsula on 23 cm. Despite a number of tests, we have heard each other's SSB signals but have yet to complete a contact. We will continue to work at it until it is achieved.

On Sunday 22 July at 8.30 am, Peter VK5ZLX was heard on 2 metres calling CQ. A contact was completed 5/9 both ways. As signals were so strong, we decided to try 23 cm and quickly exchanged 5/1 reports both ways. This is a distance of 671 km. The copy was comfortable, and after exchanging pleasantries we thought we should try 70 cm. The Trifecta was completed with 5/5 both ways on this band. An enjoyable morning's work!

Ian VK1BG, who also has one of the PAs, subsequently reports:

After a struggle lasting many weeks,

Mike VK3AAK and I completed a 23 cm SSB QSO on Tuesday 7 August at 8.25 am. Both he and I are quite chuffed about it, as the achievement did not come easily.

For me, the QSO broke a rather long drought on 23 cm. Except for a contact with Charlie (then VK3FMD) in 2003, I had not had a contact into the Melbourne area since about 1992 when Airservices shifted the aircraft tracks.

Chris VK2DO has also been having fun on 23 cm, having recently put up a large array with 100 W at the feed. He reports:

Thanks to David VK3HZ, Mike VK3AAK, David VK3QM, Chas VK3PY and Charlie VK3NX for contacts on 23 cm last night (6 August).

Charlie VK3NX had such a good signal, that I managed to work him some half an hour before he arrived in his shack? (My apologies to David VK3QM for the incorrect identification. This must have been the ultimate annoying conclusion to have erroneously jumped to, yet it was all resolved eventually).

Interesting to note the contact with Mike 3AAK was markedly stronger than any other signal previously heard from him, so some combination of night flights made all the difference.

I look forward to some action on 23 cm in the coming season.

Hepburn Tropo Ducting Forecasts

I've written a few times in this column of the excellent site provided by William Hepburn, which gives tropospheric ducting forecasts based on weather information (www.dxinfocentre.com/tropo_aus.html).

While the forecasts often prove to be uncannily accurate, one of the downsides is that they were only done once per day at 1800Z. This corresponds to 4 am local time, when not many amateurs are out of their beds. For the more popular evening lift, the forecasts were a bit out of date (the weather can change quickly, if you hadn't noticed).

Mr Hepburn seems to have realised this and is now producing forecasts for

6-hour intervals, up to 42 hours ahead. All we need now is an animated view (like the Bureau of Meteorology weather radars) and we can watch the ducts coming and going!

Radio Site Display

I've been having a bit of a play with Google Earth recently, seeing how it could be adapted for use by VHF/UHF weak signal operators. With the help of John VK3ZJP, we have come up with the Radio Site Display that I demonstrated at the recent GippsTech conference. You can find the notes on getting started here:

http://home.exetel.com.au/dwsmith/radiosites/radio_site_display.html

The Radio Site Display shows an aerial view of the Earth with overlays providing the locations of amateur radio beacons, amateur stations, Field Day sites and other information. The view is customised for each user, centred on the user's own location. Other overlays can be added, including aircraft positions and the Hepburn Tropo forecast.

The position information used by the Display comes from the VK/ZL Propagation Logger database. Thanks to Adam VK4CP who has provided access to the database, and who has added Latitude/Longitude fields to the Operator Info and Beacon tables to provide more accurate results. It would be appreciated if all active VHF/UHF weak signal operators entered their precise home coordinates to give everyone better results.

EME

Charlie VK3NX reports on his operation during the DUBUS 3.4 GHz activity weekend:

Great to be on 3.4 GHz on the weekend. It is a pity quite a few stations didn't have a common moon window to me. Nonetheless I had very good results with the new feed.

The new feed is a scaled version of RA3AQ's stepped septum, originally for 23 cm. Compared with the previous "screw polariser", I am getting much better dish efficiency, circularity and the

RL and isolation figures are excellent. Consequently, I have gone from echoes barely perceptible to very loud (> 10dB above the noise, according to Spectran).

I will be staying with this feed and I will now build a scaled version for 2.3 GHz as I look to getting on that band

Digital DX Modes

Rex Moncur – VK7MO

September to December is the best time of the year for Meteor Scatter with around 35% more random meteors than in the first half of the year. Activity sessions using WSJT's FSK441 mode are held each Saturday and Sunday morning on two metres and some stations are also arranging skeds via the VK-ZL logger on 6 metres at the same time. Arrangements for activity sessions are as follows in local times for Victoria and NSW:

0500 to 0600 Saturday, ZL first period to VK on 144.330 MHz

0600 to 0700 Sat and Sun, ZL South Island first period to ZL South Island on 144.230 MHz

Around 0600 to 0700 Sat and Sun, unstructured activity in VK on 144.230 MHz

very soon. In time I will try versions for 5.7 GHz and compare it with my Screw polariser (which already works well on this band). If all works OK then I will try it on 10 GHz.

My reports on 3.4 GHz showed a VAST improvement over last activity weekend, although moon conditions were the same

(if not slightly worse). I worked G3LTF, OK1KIR and LX1DB (also on SSB). I tried with N9JIM but nothing heard. I also tried with WW2R but only partial copy my way, while Dave reports hearing me well.

Please send any Weak Signal reports to David VK3HZ at vk3hz@wia.org.au

0700 to 0800 Saturday, VK3/5/7 first period to VK1/2/4 on 144.230 MHz

0700 to 0800 Sunday, VK1/2/3/5/7 first period to VK4 on 144.230 MHz

At 0800, a callback is held on 40 metres, 7083 kHz, to share experiences. Newcomers are welcome to join in the callback and ask questions.

The best distances for meteor scatter are in the range 800 to 1800 km where contacts can typically be completed on 2 metres in 30 minutes. The maximum distance is around 2400 km less around 100 km for each 1 degree of horizon lost at each end. As one approaches the maximum distance, the only meteors common to both stations are those that pass close to the centre of the path and thus the number of usable pings

diminishes rapidly and it can take an hour or more to complete a QSO. It is possible to extend the distance of Meteor Scatter with tropo-scatter extensions, so watch the Hepburn charts for large "Yellow" patches at one end as an indicator. The number of usable meteors increases significantly on 6 metres and thus this band can be useful for maximum range meteor scatter such as from the East Coast of VK to ZL or from Adelaide to Perth.

For further information on Meteor Scatter using WSJT look at the NSW VHF DX Group site under Digital Modes at <http://www.vhfdx.radiocorner.net/>

Please send any Digital DX Modes reports to Rex VK7MO at rmoncur@bigpond.net.au.

The Magic Band – 6 m DX

Brian Cleland – VK5BC

July continued to be very quiet with very few reports of openings on 6 m, the winter sporadic E season being almost non-existent.

One of the few openings occurred on July 12th and 13th when Kevin VK4BPK in Mackay completed contacts with Rob VK3XQ, Norm VK3DUT, Kevin VK3WN and VK3VG on both days.

In the Northern hemisphere though, things have been different and many areas have been enjoying an excellent sporadic-E summer season. I received a message from Fred KH7Y who says they have had a fantastic 6 m sporadic-E summer season in Hawaii. Fred says:

We have had 17 openings to the mainland USA during May and June.

Here is the data from my log. If there is only one time the opening was less than 3 hours. Those longer openings are as indicated. There were a few more weak openings where I received the K6FV/B but no contacts and they are not listed.
May 16, 1900 UTC - West coast USA
May 17, 0400 UTC - West coast USA

May 17, 2051 UTC - K6FV/B

May 21, 1904 UTC - W5W6/W7/XE

May 23, 0342-0530 UTC - W2/W0/W6/W7/XE, 185 QSO's this opening

May 24, 1700-2300 UTC - W7/W6/W8/W9/W4/V67/W0, 490 QSO's this opening

May 28, 2057 UTC - W6/W6/W6, K6QXY loud, very localized

June 01, 1840-2200 UTC - W7/W6/W0/UY5?/W0/T81L, 200 plus QSO's

June 17, 17:00 UTC - W4/W4/WI, only and only two counties very localized no other states or beacons

June 18, 1800-2200 UTC - this was a big one to east coast USA. Worked all call Districts & all VE except VE8/VY1, 300 QSO's

June 19, 0440 UTC - K6QXY loud, a few other sixes

June 19, 2300 UTC - 11 JA stations worked, all very loud with JA1VOK 20 over!!!

June 21, 1800 UTC - W4/5,6,7,0 and VE 5,6,7

June 26, 0000-0330 UTC - Big opening again to east coast USA W1,2,3,4,8,9, XE

June 27, 1950 UTC - W0, 1,2,3,4,5,7

June 28, 0020 UTC - W0/8/9/3/2 weak opening and short

June 30, 1900-2100 UTC - big opening east coast USA W1, 2, 3, 4, 8, 9, 0.

Well that is about it Brian. All of the above contacts were multi-hop sporadic-E and looks like 18-2200 UTC is the window to work mainland USA from Hawaii on six metres. A very good year indeed.

Aloha, Fred (ex W6YM, now KH7Y and trustee NH6P contest station).

I worked Fred on 20 m since he sent me the above and he says there has been a further 2 openings in July. Now who says sporadic-E isn't good fun. Let's hope it translates into another good summer season down here.

As reported last month, the VK5VF beacons are off the air including the 6 m beacon on 52.450 MHz. Fortunately though, the Barossa Valley beacon VK5RBV on 50.315 MHz is operational. This beacon is about 55 km NE of Adelaide in grid PF95mk, about 580 m ASL and a good indicator of conditions into VK5.

Please send any 6 m information to Brian VK5BC at bcleland@picknowl.com.au.

FOR SALE NSW

•OZI-POLE portable dipole kits complete and ready to assemble. Covers 40 - 6 metre bands and is ideal for balcony use, clamped to a picnic table or pedestrian mobile use. A great build-it-yourself project that you can use with pride from the M.N.C.A.R.G. Inc. P.O. Box 505 Bellingen NSW 2454. Visit <http://www.mncarg.org/> or email mncarg@yahoo.com.au Price \$99 + post.

•COM-AN-TENA 3 Element 20 metre computer optimised antenna as new, never been assembled \$350, o.n.o. buyer to collect at 29 Thomas Street, Bray Park, N S W 2484 email madstew@beagle.com.au or phone 02 6672 4319

WANTED NSW

•Morse key, Post Office type. VK2BTT QTHR Sydney 02 9608 1935

•HyGain 14 AVT 40 - 10 m trap vertical antenna information. Dimensions of three capacity hat rods and resonant frequencies of traps. Thanks, Malcolm Sinclair VK2BMS QTHR phone 02 9958 1114

FOR SALE VIC

•FT-707 gc ideal mobile rig and TS-440 AT needs microprocessor service. Call VK3ANJ 03 5155 1380 or QTHR

•ICOM IC-706 MKIIG. All mode transceiver, 160 m - 70 cm. Mint condition, never installed in vehicle. \$850. EMTRON reg PS EPS - 30, 13.8 V DC (floating), 30 amp int. use, 20 amp continuous. No fans EC \$275 Local collection preferred. Len VK3BHY, Sunbury 03 9740 7761 mob. 0418 149 370

•YAESU VX-170. The VX-170 is a high-performance FM hand-held, providing, adjustable RF power up to five watts and a wealth of convenient, features for the 2-metre amateur band. Additional features include Wide-coverage Internet Repeater, Enhancement System, transmit Time-Out Timer, Automatic, Power-Off, Automatic Repeater Shift, Programmable RF squelch, and many other exciting and desirable

features. SUPPLIED ACCESSORIES: FNB- 83 7.2 V, 1400 mAh rechargeable NiMH battery pack, NC-888 overnight battery charger (10-hour), YHA-68 antenna, quick draw belt clip, operating manual, warranty card. SUPPLIED OPTIONS: VAC- 370 desktop rapid charger, CD-26 charger cradle, E-DC cigarette lighter cord. All of the items listed were purchased on 12/09/2006 and, except for checking their operation on delivery, have never performed any other function. They are therefore new in every sense of that term. The balance of warranty for the transceiver (S/N 6H121114) is current until 12/09/2007. PRICE: \$280.00, CONTACT: John Carodus VK3CJA QTHR, tel: 03 5666 2551, email: vk3cja@internode.on.net

WANTED VIC

•Early YAESU HF Transceiver FTDX-100. These were on the market in the late 1960's. May be working or non working - but otherwise complete. Happy to discuss a suitable remuneration, external appearance to be reasonable considering age! Contact: Ian VK3XI QTHR Email ikeenan@bigpond.com.au or Ph 03 9580 8627

FOR SALE QLD

•5 x 828 tubes and sockets. 1 x 4CX1500A. 1 x 8122 plus ceramic socket. 2 x 4CX 250B with silverware. All with data sheets. Paul VK4DJ Tel 07 4775 7998

FOR SALE SA

•YAESU FT-857D with new unopened separation kit \$900 plus postage. Paul VK5MAP 08 8651 2398.

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The Wireless Institute of Australia represents the interests of all amateurs throughout Australia.

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National Office	Contact	News Bulletin Schedule
10/229 Balclava Road Caulfield North VIC 3161 PO Box 2175 Caulfield Junction Vic 3161 Australia	Phone 03 9528 5962 Fax 03 9523 8191 10am to 4pm daily nationaloffice@wia.org.au http://www.wia.org.au	Subject to change. See www.wia.org.au follow National News prompts. Contact nationalnews@wia.org.au National VK1WIA news is distributed to all states.

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VK1 Australian Capital Territory VK1WX Alan Hawes VK1ZPL Phil Longworth VK1ET John Woolner VK1GH Gil Hughes	vk1advisory@wia.org.au	Sundays at 11.00 am VK1WIA 7.128, 146.950, 438.050 Canberra Region Amateur Radio Club Email newsletter will be sent on request to president@vk1.ampr.org
VK2 New South Wales VK2QV Chris Flak VK2XCD Chris Devery VK2BFN Adrian Clout	Phone 02 9651 1490 vk2wi@ozemail.com.au vk2advisory@wia.org.au	VK2Wi - Sunday 1000 and 1930 hours local. 1.845; 3.595; 7.146; 10.125; 14.170; 28.320, 52.525; 145.600; 147.000; 438.525; 1273.500 megahertz. Plus regional relays. 5423.5 kHz [morning] VK1WIA news included in the morning
VK3 Victoria VK3JUB John Brown VK3PC Jim Linton VK3APO Peter Mill	Phone 03 9885 9261 arv@amateurradio.com.au	VK1WIA, Sunday 10.30 am and 8 pm, 3.615 and 7.065 (LSB), 10.130 (USB), VK3RML 146.700, VK3RMM 147.250, VK3RMU 438.075.
VK4 Queensland VK4BY Don Wilchelski VK4ZZ Gavin Reibelt VK4KF Ken Fuller	vk4advisory@wia.org.au	VK1WIA, Sunday 9.00 am via HF and major VHF/UHF repeaters
VK5 South Australia and Northern Territory VK5QV David Box VK5APR Peter Reichelt VK5ATQ Trevor Quirk	Phone 08 8294 2992 boxesndnm@lm.net.au peter.reichelt@bigpond.com vk5advisory@wia.org.au	VK5 South Australia VK5Wi: 0900 hrs local time, 1.843 LSB, 3.550 LSB, 7.140 LSB, 28.470 USB, 53.1 AM, 147.000 FM Adelaide, 146.900 FM South East, 146.925 FM Central North, 439.975 FM Adelaide North. VK5 Northern Territory 0900 local time 3.555 LSB, 7.050 LSB, 10.130 USB, 146.900 FM.
VK6 Western Australia VK6NE Neil Penfold VK6XV Roy Watkins VK6OO Bruce Hedland-Thomas	Phone 08 9351 8873 http://www.vk6.net/ vk6advisory@wia.org.au phil.corby@tassie.net.au vk6xv@bigpond.net.au	VK6WIA: 146.700 FM(R) Perth at 0930 hrs Sunday relayed on 1.865, 3.564, 7.075, 10.125, 14.116, 14.175, 21.165, 23.120 FM, 50.150 and 438.525 MHz, Country relays 3.562, 147.200 (R) Catalpa, 147.350 (R) Bussellton, 146.900 (R) Mt William (Bunbury), 147.000 (R) Katanning and 147.250 (R) Mt Saddleback. Broadcast repeated on 146.700 at 1900 hrs Sunday relayed on 1.865, 3.564 and 438.525 MHz : country relays on 146.900, 147.000, 147.200, 147.250 and 147.350 MHz. Also in "Realaudio" format from the VK6 WIA website
VK7 Tasmania VK7ZAX Phil Corby VK7DG Dale Barnes VK7KK Reg Emmelt	Phone 03 6234 3553 vk7advisory@wia.org.au phil.corby@tassie.net.au vk7dg@wia.org.au regemm@ozemail.com.au	VK1WIA Sunday 9 am on VK7Wi network: 1.840 AM, 3.570 MHz LSB, 146.700 FM (VK7RHT South), 53.625 FM (VK7RAD South), 147.000 FM (VK7RAA North), 146.750 FM & 53.825 (VK7RNN North West), 146.625 FM (VK7RMD North West), UHF CB Channel 15 (Hobart) and 27 MHz CB - 27.225LSB (Hobart). Followed at 9:30 am with VK7 Regional News Broadcast also on 7.090 LSB & 14.130 USB

Notes

1. Only those members of the state advisory committees are listed.
2. All listings are preliminary. They will be updated each month as required.
3. Membership application forms are available from the WIA web site www.wia.org.au or the national office address above.

Is this a record?



Most of us are probably aware that people can climb the Sydney Harbour Bridge. The climb is quite a tourist attraction.

Here we see Victor Hee VK2KVH, together with his partner Samantha Gray, celebrating his 80th birthday on the main arch of the bridge on Good Friday 2007. Perhaps this is a record – the oldest licensed amateur to climb the bridge?

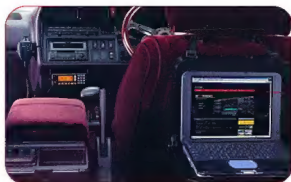
Photo courtesy Victor Hee VK2KVH

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